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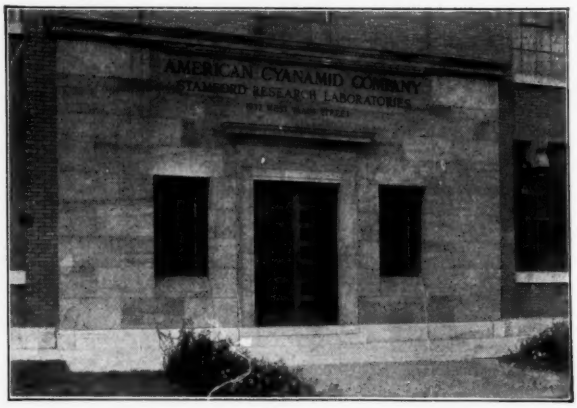

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AMERICAN
DYESTUFF REPORTER

VOLUME 28 FEBRUARY 20, 1939 NUMBER 4

Chemical Constitution of the

Naphthol AS Type Dyes

KENNETH L. DORMAN*

PART I. INTRODUCTION

DUE to the rapid increase in the use of the Naphthol AS azoic colors for dyeing and printing textile fabrics, and the apparent widespread lack of knowledge of the exact chemical composition of these dyestuffs, as well as the lack of co-ordination of the various material published on this subject, it is thought that this review will be helpful to textile chemists.

In the past, the chemist, dyer, or printer was simply content to remain in ignorance of the chemistry of dye coupling provided the mechanics of the process took care of themselves and produced the desired result. In case of difficulties the whole problem was turned over to technicians sent out by the dyestuff companies. While this step is advisable in many instances, many simple difficulties could be straightened out by the plant chemist, as well as the more difficult problems solved sooner by the combined efforts of plant chemist and dyestuff technician, had the former the knowledge of just what was happening in a chemical way during dye coupling.

In the past few depression years (as well as these present years of "recession"), economic pressure has forced purse tightening, and has made the plant chemist broaden his knowledge and outlook. There has been brought home the necessity of doing things a little better than ones' competitors, as well as an awakening that the textile industry as a whole has not kept pace with new developments as has been done in other industries. The textile industry will not develop as it should unless it is placed on a basis of research and applied research. There is gradually developing in this industry the realization that not only do the mechanical and routine chemical operations matter, but also is it important to look further into things and find out the reason why. The trend of the ultimate consumer is for finer quality, and for the production of better quality in textiles constant research is necessary to solve the newly arisen problems connected with quality as well as quantity. Chemistry is an important tool in this connection.

*Research and Dyestuff Chemist, Pacific Mills, Print Works Division.

For these reasons the following article is submitted. The author does not propose to list all the AS type dyestuffs for this would require more space, but is listing some of the more important ones, and with which he is most familiar. It was originally intended to list in the tables the references, but due to space limitations and certain sources of information which the author is not at liberty to reveal at this time, the bibliography at the end will enable those who will, to pursue this subject further.

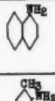
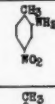
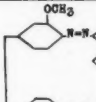
PART II. HISTORICAL

In the azoic colors, two methods of operation are possible, speaking in simplest terms. The first component, the phenol or naphthol, could be put on the fiber first, and the coupling with the second component could then be accomplished. Or the reverse order could be employed, the second component, the amine, could be first applied, and then this coupled to the first component, the phenol or naphthol. These methods of operation led to the desire to put the two on the fiber simultaneously and then coupling under controlled conditions. This method is typified by the Rapidogen type components, for example, of which more is said in another section of this article. In general, the so-called "Diazo Colors" ("D&D") are amines which are first put on the fiber, diazotized right on the fiber, and then coupled to developers which are usually phenolic or naphthoic in nature. The method of first applying the first component, the phenol or naphthol, and then coupling with an amine which has previously been diazotized has led to the Naphthol AS type of azoic colors.

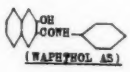
Apropos the AS type, it was discovered that if cloth be padded with a phenol or naphthol, such as beta naphthol (strictly speaking, sodium beta naphtholate, or beta naphthol dissolved in aqueous alkali), the cloth then dried, and subsequently passed through a solution of a diazotized amine, such as para nitro aniline, that a coupling occurred, and that the red dyestuff was retained on the fiber. This led to the color range being called ingrain colors—being formed on the fiber. This discovery was made in 1880 by the firm of Read, Holliday and Sons, and later developed by the firm of Meister, Lucius and Bruning.

Similarly, cloth padded with sodium beta naphtholate was coupled with other diazotized amines as is shown in Table I. The amines must be, with a few exceptions, aromatic amines, for aliphatic amines are not diazotizable. Then other first components (phenols and naphthols) were used with the various amines to build up a multiplicity of colors. The Naphthol AS first components are simply more complex naphthols in place of beta naphthol, and the Naphthol AS Bases are simply more complex amines than were available at that time.

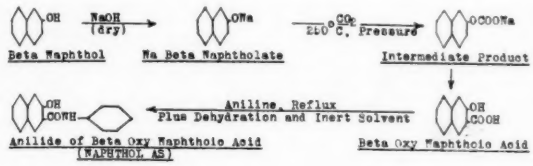
TABLE I

Name of Amine	Chemical Formula of Amine	First Component (Beta Naphthol)	Formula of Coupled Product (Ingrain Dyestuff)	Shade Produced
Para Nitro Aniline				Red
Meta Nitro Aniline				Orange
Beta Naphthyl-amine				Red
Alpha Naphthyl-amine				Bor-deaux
Para Nitro Ortho Toluidine				Orange
Meta Nitro Para Toluidine				Red
Para Nitro Ortho Anisidine				Bluish Red
Benzidine		(In excess)		Puce
Dianisi-dine		(In excess)		Violet
Di Amine Di Phenyl Amine		(In excess)		Black
Primuline				Deep Red

However, although the simple ingrain colors were a vast improvement over the previous colors, much was wanting. The beta naphthol turned color on the cloth if stored too long before coupling, was not very substantive to the fiber, was sensitive to metallic salts, and the first component (naphthol) had to be dried after being padded on the cloth before coupling could be carried out satisfactorily. The colors were not fast enough and often were dull. Accordingly, the Griesheim Elektron A.G. placed on the market another naphthol which was to take the place of beta naphthol as the first component. Owing to the World War, this was not developed in America to any great extent until the early twenties. The substitute naphthol for beta naphthol was the anilide of beta hydroxy naphthoic acid, and was called Naphthol AS. It is represented chemically:



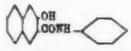
The acid is made by reacting carbon dioxide and sodium beta naphtholate (dry) under pressure at 250 degrees Centigrade. The anilide is formed from B.O.N. (beta oxy naphthoic acid) by refluxing the acid and aniline in an inert solvent and removing the water of reaction as it is formed. These processes might be represented thus, an adaptation of Kolbe's Synthesis of Salicyclic Acid:

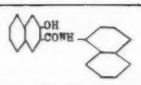
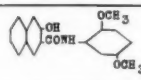
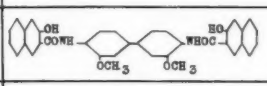
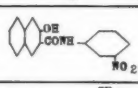
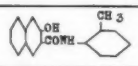
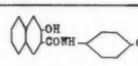
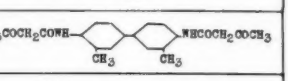
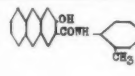
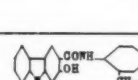
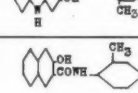
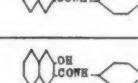
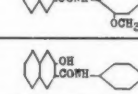
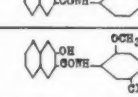
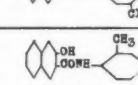
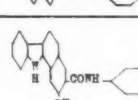
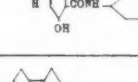
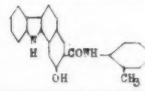


Not content with one first component with which to couple various second components (amines), water insoluble groups such as chloro, and nitro, and ethyl, methyl, ethoxy, and methoxy, were substituted in the anilide to produce many more shades and colors with the amines. This led to calling them Naphthols, and prefixing in the beginning, the AS followed by various letters, for example AS-BR, AS-SW, AS-RL, etc. Of late some firms have dropped the AS and simply call them by SW, BR, RL, etc. It is to be noted that AS-G is not a naphthol according to chemical composition, as is shown in the next section.

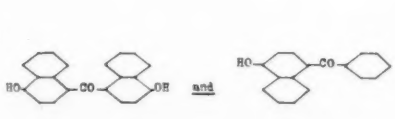
PART III. CHEMICAL CONSTITUTION OF THE AS TYPE FIRST COMPONENTS

TABLE II

Trade Name	Chemical Name	Chemical Formula
B. O. N.	Beta Oxy Naphthoic Acid	
Naphthol AS Brenthol AS Naphthanil AS Naphthosol AS	Anilide of B. O. N.	
Naphthol AS-AN	Para Nitro Anilide of B. O. N.	

Naphthol AS-BO Naphthanil BO (Naphthanil AS-BO)	Alpha Naphthalide of B. O. N.	
Naphthol AS-BG Naphthanil BG (Naphthanil AS-BG)	2:5 Dimethoxy Anilide of B.O.N. or Amino Hydroquinone Dimethyl Ether of B. O. N.	
Naphthol AS-BR	Dianisidide of B. O. N.	
Naphthol AS-BS Naphthanil BS Naphthosol BS Naphthol AS-WA	Meta Nitro Anilide of B. O. N.	
Naphthol AS-D Naphthanil AS-D Naphthosol D	Ortho Toluidide of B. O. N.	
Naphthol AS-E	Para Chlor Anilide of B. O. N.	
Naphthol AS-G	Diaceto Acetyl Ortho Tolidine	
Naphthol AS-GR	Beta Oxy Anthracene Carboxylic Acid Ortho Toluidide or Ortho Toluidide of 2-Hydroxy-Anthracene 3-Carboxylic Acid	
Naphthol AS-LB	Ortho Toluidide of Hydroxy-Carbazole	
Naphthol AS-LT	2-Methyl Para Anisidide of B.O.N or 4-Methoxy Toluidide of B. O. N.	
Naphthol AS-OL	Ortho Anisidide of B. O. N.	
Naphthol AS-RL Naphthanil RL (Naphthanil AS-RL) Naphthosol RL	Para Anisidide of B. O. N.	
Naphthol AS-ITR	2:4-Dimethoxy-5-Chlor-Anilide of B. O. N.	
Naphthol AS-TR	4-Chlor Ortho Toluidide of B. O. N.	
Naphthol AS-SG	5'-Hydroxy(1,2-Benzocarbazol)-4'-Carboxylic Acid Para-Anisidide.	
Naphthol AS-SR	5'-Hydroxy(1,2-Benzocarbazol)-4'-Carboxylic Acid-2:4-Dimethyl Anilide	
Naphthol AS-SW Naphthanil SW (Naphthanil AS-SW) Naphthosol SW	Beta Naphthalide of B. O. N.	

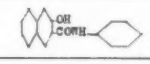
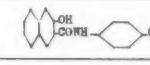
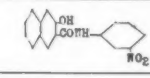
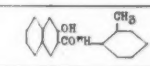
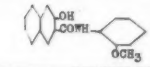
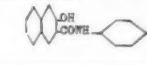
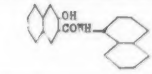
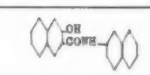
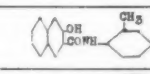
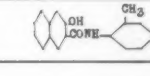
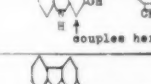
The Ciba Naphthols are a different type, namely, hydroxy naphtho-ketones:

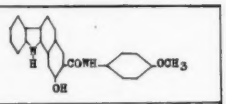
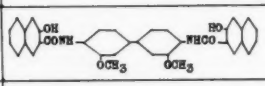
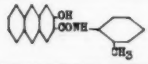
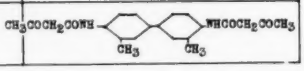


It will be noted that all the first components are naphthols or substituted naphthols of various degrees of substitution, with the exception of AS-G. It will also be noted that no sulfonic or free carboxylic acid groups are present as these would confer water solubility to the coupled product.

PART IV. THE NAPHTHOLS LISTED AS DERIVATIVES OF THE PARENT-NAPHTHOL AS

TABLE III

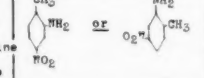
A.	Parent - Naphthol AS - Anilide of B. O. N.	
B.	Mono Substituted Derivatives of AS	
	1. Chloro Mono Substituted Derivatives of AS	
	Para Chlor Anilide of B. O. N. - Naphthol AS-E	
	2. Nitro Mono Substituted Derivatives of AS	
	Meta Nitro Anilide of B. O. N. - Naphthol AS-BS Naphthol AS-WA Naphthanil BS Naphthosol BS	
	Para Nitro Anilide of B. O. N. - Naphthol AS-AN	
	3. Miscellaneous Mono Substituted Derivatives of AS	
	Ortho Toluidide of B. O. N. - Naphthol AS-D Naphthanil AS-D Naphthosol D	
	Ortho Anisidide of B. O. N. - Naphthol AS-OL	
	Para Anisidide of B. O. N. - Naphthol AS-RL Naphthanil AS-RL Naphthanil RL Naphthosol RL	
C.	Disubstituted Derivatives of AS	
	Alpha Naphthalide of B. O. N. - Naphthol AS-BO Naphthanil AS-BO Naphthanil BO	
	Beta Naphthalide of B. O. N. - Naphthol AS-SW Naphthanil AS-SW Naphthanil SW Naphthosol SW	
	4-Chlor Ortho Toluidide of B. O. N. - Naphthol AS-TR	
	2:5-Dimethoxy Anilide of B. O. N. - Naphthol AS-BG Naphthanil AS-BG Naphthanil BG	
	2-Methyl Para Anisidide of B. O. N. - or - 4-Methoxy Toluidide of B. O. N. - Naphthol AS-LT	
D.	Trisubstituted Derivatives of AS	
	2:4-Dimethoxy-5-Chlor Anilide of B. O. N. - Naphthol AS-ITR	
E.	Naphthol AS Type-Derivatives of Carbazole	
	Ortho Toluidide of Hydroxy Carbazole - Naphthol AS-LB	
	5'-Hydroxy(1,2-Benzocarbazol)4'-Carboxylic Acid-2:4 Dimethyl Anilide - Naphthol AS-SR	

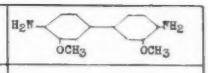
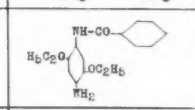
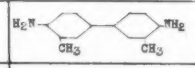
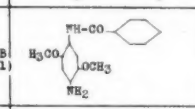
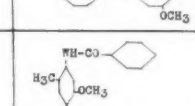
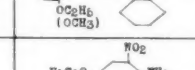
	5'-Hydroxy(1,2-Benzocarbazol)4'-Carboxylic Acid-Para Anisidide - Naphthol AS-SG	
F.	Miscellaneous Naphthol Types	
	Dianisidide of B. O. N. - Naphthol AS-BR	
	Ortho Toluidide of Beta Oxy Anthracene Carboxylic Acid - Naphthol AS-GR	
	Diaceto Acetyl Ortho Tolidine Naphthol AS-G	

PART V. CHEMICAL CONSTITUTION OF THE NAPHTHOL AS SECOND COMPONENTS—THE NAPHTHOL BASES AND NAPHTHOL SALTS

The Naphthol Salts are generally the Naphthol Bases of the same mark which have been diazotized. For example, Fast Scarlet 2G Salt is Fast Scarlet 2G Base Diazotized. For this reason both have been grouped in the table below, and the chemical name and formula given as if for the base. In general, bases followed by the mark "C" are the hydrochlorides of the corresponding bases without the "C." The hydrochlorides are formed for purposes of stabilization and/or ease of manipulation and slight shading. It will be noted that the bases are all amines of various degrees of substitution. It will also be noted that no sulfonic or carboxylic groups inducive of solubility in the coupled product are present. The amine must be aromatic, in general, so as to be capable of undergoing the diazo reaction, and these amino groups also must not be substituted in the case of the simple bases as denoted in Table IV. This is not the case in the Rapidogen etc., types, but in these types the amino groups which are later to be coupled with the phenolic or naphthoic color constituents are deliberately bound up until conditions are right and coupling can be accomplished under controlled conditions. The author has listed the Colour Index numbers when known.

TABLE IV

Trade Name	Chemical Name of Base	Chemical Formula of Base
Fast Yellow G Fast Yellow GC	Ortho Chlor Aniline	
Fast Orange G Fast Orange GC Fast Yellow R Naphthanil Orange GC Naphthosol Fast Orange GC	Meta Chlor Aniline	
Fast Orange GR	Ortho Nitro Aniline	
Fast Orange R (Colour Index # 38)	Meta Nitro Aniline	
Fast Scarlet G Fast Scarlet GC Naphthosol Fast Scarlet G (Colour Index # 68)	5-Nitro Ortho Toluidine or 4-Nitro 2-Amino Toluene or Meta Nitro Ortho Toluidine or 2-Methyl 5-Nitro Aniline	
Fast Scarlet GG Fast Scarlet 2G Fast Scarlet CG Naphthanil Fast Scarlet GG Naphthosol Fast Scarlet GG	2:5 Dichloro Aniline	
Fast Scarlet R Naphthosol Fast Scarlet RC Naphthanil Fast Scarlet R (Colour Index # 115)	5-Nitro Ortho Anisidine or 4-Nitro-2-Amino Anisole or Meta Nitro Ortho Anisidine	
Fast Scarlet TR	6-Chloro-2-Amino Toluene or 3-Chloro Ortho Toluidine	
Fast Scarlet RS	2-Methoxy-5-Nitro Aniline (see Scarlet R)	
Fast Scarlet B	Beta Naphthylamine	
Fast Red B Naphthosol Fast Red B Naphthanil Red B	4-Nitro Ortho Anisidine or 5-Nitro-2-Amino Anisole or 2-Methoxy-4-Nitro Aniline	
Fast Red 2B Fast Red BB (Colour Index #113)	2-Methoxy Aniline or Ortho Anisidine	
Fast Red G Fast Red GL Naphthanil Fast Red G Naphthosol Fast Red GL	2-Nitro Para Toluidine or 2-Nitro-4-Methyl Aniline	
Fast Red 2G Fast Red GG Fast Red GGS (Colour Index #44)	Para Nitro Aniline	
Fast Red 3GL Fast Red 3G Fast Red 3GL Special Naphthanil Fast Red 3G Naphthosol Fast Red 3GL	4-Chlor Ortho Nitro Aniline or 2-Nitro 4-Chlor Aniline or 4-Chlor 2-Nitro Aniline	
Fast Red R Fast Red RC Naphthanil Fast Red RC (Colour Index # 116)	5-Chloro Ortho Anisidine or 4-Chloro 2-Amino Anisole	
Fast Red RL Naphthanil Fast Red RL	4-Nitro Ortho Toluidine or 5-Nitro 2-Amino Toluene	
Fast Red TR	4-Chloro Ortho Toluidine or 5-Chloro 2-Amino Toluene	
Fast Red ITR	Ortho Anisidine 4-Sulfon-Diethyl Amide	
Fast Red RBE	6-Benzoyl Amino 4-Amino-Meta Xylene	
Fast Red KB Naphthosol Fast Red KB	5-Chloro Ortho Toluidine or 4-Chloro 2-Amino Toluene or 2-Methyl 5-Chloro Aniline	
Fast Red AL Naphthanil Fast Red AL Naphthosol Fast Red AL	1-Amino Anthraquinone	
Fast Garnet B Fast Maroon B (Colour Index # 82)	Alpha Naphthylamine	
Fast Garnet G Fast Garnet GB Fast Garnet GBC Naphthanil Fast Garnet GBC (Colour Index # 17)	Ortho Amino Azo Toluene	
Fast Corinth B	Benzidine	
Fast Bordeaux GP Naphthosol Fast Bordeaux GP Naphthanil Fast Bordeaux GP	2-Nitro Para Anisidine or 2-Nitro 4-Methoxy Aniline	

Fast Blue B Naphthanil Fast Blue B Naphthosol Fast Blue B Azogene Fast Blue B	Dianisidine	
Fast Blue BB Fast Blue 2B	4-Benzoyl Amino-2:5-Diethoxy Aniline	
Fast Dark Blue R	Tolidine	
Fast Blue RR Fast Blue 2R	4-Benzoyl Amino-2:5-Dimethoxy Aniline or Dimethyl Ester of Blue BB (Methyl in place of Ethyl)	
Variamine Blue B	4-Amino 4'-Methoxy Diphenyl Amine	
Variamine Blue RT	4-Amino Diphenylamine	
Variamine Blue FG	4-Amino 3-Methoxy Diphenylamine	
Fast Violet B	6-Benzoyl Amino-4-Methoxy 3-Amino Toluene	
Fast Black B Naphthanil Fast Black B Naphthosol Fast Black B	4:4' Diamino Diphenylamine	
Fast Black LB	2-Ethoxybenzene Azo Alpha-Naphthylamine or Ortho Phenetidine Azo Alpha-Naphthylamine	
Fast Blue Red O (Colour Index #123)	Ortho Nitro Para Phenetidine	

In Table IV-a below, the dyestuffs of French manufacture are listed in comparison with those of the German prototype.

TABLE IV-A

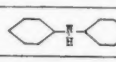
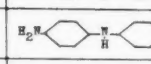
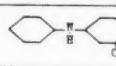
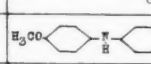
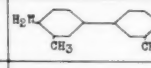
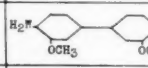
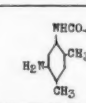
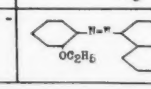
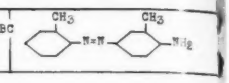
*French Manufacturer**	*German Manufacturer†*
Naphthol NA	Naphthol AS (also spelled Napthol)
Naphtazol NB	Naphthol AS-BS
Naphtazol N3B	Naphthol AS-BO
Naphtazol ND	Naphthol AS-D
Naphtazol NF	Naphthol AS-OL
Naphtazol NRL	Naphthol AS-RL
Naphtazol NSW	Naphthol AS-SW
Naphtazol NTR	Naphthol AS-TR
Naphtazol NEL	No prototype
Naphtazol NJ	Naphthol AS-G
Fast Yellow Base NJS	Fast Yellow GC Base
Azogene Red Base B	Fast Red B Base
Fast Red Base NRL	Fast Red Base RL
Fast Red Base N3JL	Para Chlor Ortho Anisidine
Fast Red Base NTR	Fast Red Base TR
Fast Red Base NK	No prototype
Fast Yellow Salt NJS	Fast Yellow Salt GC
Fast Orange Salt NJR	Fast Orange Salt GR
Fast Orange Salt NJS	Fast Orange Salt GC
Fast Scarlet Salt N2J	Fast Scarlet Salt 2G
Fast Scarlet Salt NRS	Fast Scarlet Salt R
Fast Scarlet Salt N3J	No prototype
Fast Scarlet Salt NJ	Fast Scarlet Salt G
Fast Red Salt N2J	Fast Red Salt 2G
Fast Red Salt NRS	Fast Red Salt RC
Fast Red Salt NTR	Fast Red Salt TR
Fast Red Salt NAL	No prototype
Fast Red Salt NCL	No prototype
Fast Bordeaux Salt NJ	Fast Bordeaux Salt GP
Fast Blue Salt NB	Fast Blue Salt B

*Kuhlmann & Co., Paris
†I. G., represented in U. S. A. by General Dyestuff Corp., New York.

PART VI. THE BASES LISTED ACCORDING TO THE AMINE FROM WHICH THEY WERE DERIVED

TABLE V

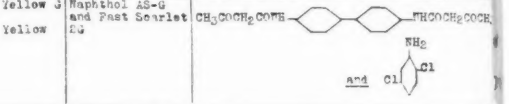
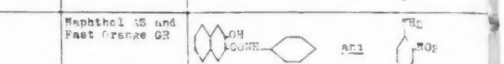
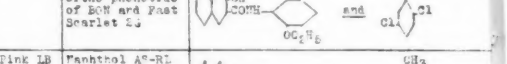
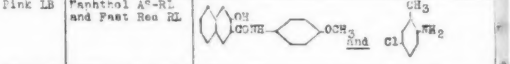
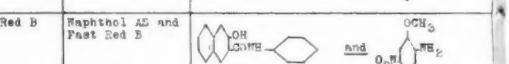
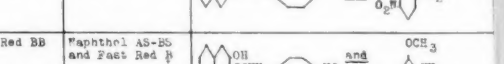
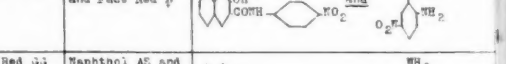
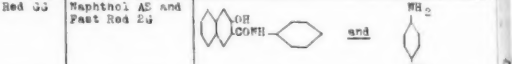
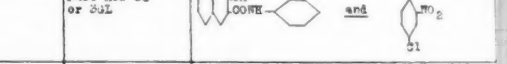
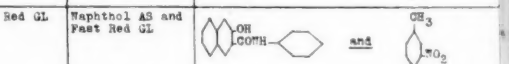
A.	Derivatives of Aniline	
	1. Chloro Derivatives	
	Ortho Chloro Aniline - Fast Yellow 3, GC	
	Meta Chloro Aniline - Fast Orange 3, GC	
	2:5 Dichloro Aniline - Fast Scarlet 2J	
	2. Nitro Derivatives	
	Ortho Nitro Aniline - Fast Orange GR	
	Meta Nitro Aniline - Fast Orange R	
	Para Nitro Aniline - Fast Red 2J	
	3. Mixed Derivatives	
	4-Chloro Ortho Nitro Aniline - Fast Red 3 GL	
B.	Derivatives of Toluidine	
	1. Chloro Derivatives	
	5-Chloro Ortho Toluidine - Fast Red KB	
	4-Chloro Ortho Toluidine - Fast Red TR	
	5-Chloro Ortho Toluidine - Fast Scarlet TR	
	2. Nitro Derivatives	
	5-Nitro Ortho Toluidine - Fast Scarlet G, GC	
	4-Nitro Ortho Toluidine - Fast Red RL	
	2-Nitro Para Toluidine - Fast Red G, GL	
C.	Derivatives of Anisidine	
	1. Unsubstituted	
	Ortho Anisidine - Fast Red 2B	
	2. Chloro Derivatives	
	5-Chloro Ortho Anisidine - Fast Red R, RC	

3. Nitro Derivatives	
4-Nitro Ortho Anisidine - Fast Red B	
5-Nitro Ortho Anisidine - Fast Scarlet R	
2-Nitro Para Anisidine - Fast Bordeaux GP	
5-Sulfon-Diethylamide of Ortho Anisidine - Fast Red ITR	
D. Derivatives of Diphenylamine	
4-Amino Diphenylamine - Variamine Blue RT	
4:4'-Diamino Diphenylamine- Fast Black B	
4-Amino-3-Methoxy Diphenylamine - Variamine Blue FG	
4-Amino-4'-Methoxy Diphenylamine - Variamine Blue B	
E. Derivatives of Diamines	
Benzidine - Fast Corinth R, B	
Tolidine - Fast Dark Blue R	
Dianisidine - Fast Blue B	
F. Derivatives of Naphthylamines	
Alpha Naphthylamine - Fast Maroon B, Fast Garnet B	
Beta Naphthylamine - Fast Scarlet B	
G. Derivatives of Amino Anthraquinone	
1-Amino Anthraquinone - Fast Red A L	
H. Derivatives of Phenetidine	
Ortho Nitro Para Phenetidine - Fast Blue Red O	
I. Miscellaneous Amine Derivatives	
4-Benzoylamino-2:5-Dimethoxy Aniline - Fast Blue RR	
4-Benzoylamino-2:5-Diethoxy Aniline - Fast Blue BB	
6-Benzoylamino-4-Methoxy-3-Amino-Toluene - Fast Violet B	
6-Benzoylamino-4-Amino-Meta-Xylene - Fast Red RBE	
2-Ethoxybenzene-azo-alpha-Naphthylamine - Fast Black LB	
Ortho-Amino-Azo-Toluene - Fast Garnet G, GB, GBC	

PART VII. CHEMICAL CONSTITUTION OF THE RAPID FAST COLORS

In the table below only the starting constituents are given from which the powder or paste available commercially is made, that is, the bases and naphthols only are listed. It is necessary to read into this table the fact that the base must be diazotized, the stable sodium diazonate compound made, standardizers added, and this dried and mixed with the first component (naphthols). A further discussion of this is given under a later section describing the passive type of stabilized diazonium compounds. Hydrochlorides or sulfates of the bases are not given.

TABLE VI

Trade Name	Chemical Constituents by Trade Names	Chemical Formulae of Fundamental Constituents
Rapid Fast Yellow G Paste Rapid Fast Yellow GH Powder	Naphthol AS-G and Fast Scarlet RG	
Rapid Fast Orange RG	Naphthol AS and Fast Orange GR	
Rapid Fast Orange RH	Naphthol - the ortho phenetide of BON and Fast Scarlet RL	
Rapid Fast Pink LB	Naphthol AS-RL and Fast Red RL	
Rapid Fast Red B	Naphthol AS and Fast Red B	
Rapid Fast Red BB	Naphthol AS-BS and Fast Red B	
Rapid Fast Red GG	Naphthol AS and Fast Red RG	
Rapid Fast Red 3J	Naphthol AS and Fast Red 3G or 3GL	
Rapid Fast Red GL	Naphthol AS and Fast Red GL	
Rapid Fast Red 3GL	Naphthol AS and Fast Red 3GL	
Rapid Fast Red GZ	Naphthol AS and Fast Scarlet RG	
Rapid Fast Red IRH	Naphthol AS-LT and Fast Red TR	

(Continued on page 101)

PROCEEDINGS OF THE

American Association of Textile Chemists and Colorists

FEBRUARY 20, 1939

Officers of the Association

ALBAN EAVENSON, *President*
Eavenson & Levering Co., Camden, N. J.
DUNCAN FERGUSON—ARTHUR R. THOMPSON, JR., *Vice-Presidents*

WILLIAM R. MOORHOUSE, *Treasurer*
National Aniline & Chemical Co., Boston, Mass.
HAROLD C. CHAPIN, *Secretary*
Lowell Textile Institute, Lowell, Mass.

LOUIS A. OLNEY
President Emeritus and Chairman of the Research Committee
Lowell Textile Institute, Lowell, Mass.

Councilors-at-Large

BERKELEY L. HATHORNE
G. R. KREMERS
WALTER M. SCOTT
PETER J. ARIENTE
R. S. WHEELER
HAROLD DE WITT SMITH

Councilors Representing Sections

BEN VERITY (Rhode Island)
HENRY F. HERRMANN (New York)
DEXTER R. KNEELAND (N. New England)
C. A. JONES (South Eastern)
HERBERT S. TRAVIS (Philadelphia)
B. C. BLOWNEY (Midwest)
HOMER WHELCHEL (South Central)
RAPHAEL E. RUPP (Piedmont)

Local Sections and Their Officers

Northern New England Section
Clarence L. Nutting, Chairman, Arlington Mills, Lawrence, Mass.
John N. Dalton, Secretary, Pacific Mills, Worsted Division, Lawrence, Mass.

Rhode Island Section
Richard Haworth, Chairman, 25 Fountain St., Providence, R. I.
Louis D. Fleming, Secretary, Woodlawn Finishing Co., Pawtucket, R. I.

New York Section
Louis S. Zisman, Chairman, Gotham Silk Hosiery Co.
33rd St. and 1st Ave., New York, N. Y.
P. J. Kennedy, Secretary, E. I. duPont de Nemours & Co., Inc.
61 Thomas St., New York, N. Y.

Philadelphia Section
William Ebersold, Chairman, 1512 Sheridan Lane, Norristown, Pa.
James P. Conaway, Secretary, 5947 Belden St., Frankford, Philadelphia, Pa.

Piedmont Section
A. Henry Caede, Chairman, Laurel Soap Mfg. Co., Charlotte, N. C.
J. W. Ivey, Secretary, Mathieson Alkali Works, Inc., Charlotte, N. C.

South Central Section
Nestor Grotelueschen, Chairman, Magnet Mills, Clinton, Tenn.
W. S. McNab, Secretary, Quaker City Chemical Co., Knoxville, Tenn.

Midwest Section
Edward J. Siegrist, Chairman, Holeproof Hosiery Co., Milwaukee, Wis.
Herbert W. Tetzlaff, Secretary, Geigy Co., Inc., Milwaukee, Wis.

South-Eastern Section
Robert W. Philip, Chairman, Editor, "Cotton," Atlanta, Ga.
Alfred R. Macormac, Secretary, Alabama Polytechnic Institute, Auburn, Ala.

Lowell Textile Institute Student Section
Vernon W. Colby, Chairman; William B. Prescott, Secretary.

North Carolina State College Student Section
W. L. Carter, Chairman; Seymour Schandler, Secretary.

Philadelphia Textile School Student Section
Newton Monschein, Chairman; Bernard Menin, Secretary

Members should notify the **Secretary** immediately of all address changes

LAPEL BUTTONS

A supply of lapel buttons in 10 Kt. gold, bearing the seal of the Association, is available. Orders from members in good standing, accompanied by price of $1.50, may be addressed to the Secretary of the Association, Lowell Textile Institute, Lowell, Mass. Please make checks payable to "Secretary, A.A.T.C.C."

Annual Business Meeting

December 2, 1938, Atlanta, Ga.

THE Annual Business Meeting of the American Association of Textile Chemists and Colorists convened at five-five o'clock, P.M., on Friday, December 2, 1938, in the Atlanta Biltmore Hotel, with President Alban Eavenson presiding.

President Eavenson: The first order of business is consideration of the Secretary's report.

. . . Secretary Chapin presented his prepared report . . .

SECRETARY'S REPORT

Between November 1st, 1937, and November 1st, 1938, the Association had a net gain in membership of about nine per cent, well distributed, but noteworthy in the Southeastern Section. Following are membership figures for November 1st of this year and the previous four years.

Section	1934	1935	1936	1937	1938
Northern New England	247	273	284	312	333
Rhode Island	189	210	225	286	301
New York	316	363	381	448	489
Philadelphia	204	264	285	351	382
Piedmont	111	174	220	258	283
South Central	39	45	45	50	61
Southeastern	38	48	50	75	132
Mid West	100	108	136	156	162
Student Sections	22	33	18	56	31
Unclassified	33	47	56	61	71
Corporate	25	28	28	30	30
Totals	1324	1593	1728	2083	2275

Council meetings were held as follows:

116th—Providence, February 11, 1938
117th—Washington, April 30, 1938
118th—New York, June 1, 1938
119th—Boston, October 21, 1938
120th—Atlanta, December 2, 1938

Respectfully submitted,
HAROLD C. CHAPIN,
Secretary.

President Eavenson: Gentlemen, what is your pleasure concerning the Secretary's report?

W. H. Cady: I move it be accepted and filed.

. . . The motion was duly seconded, put to vote, and carried . . .

President Eavenson: We will now listen to the Treasurer's report.

Secretary Chapin: Mr. Moorhouse was sorry not to be able to come to the meeting, but has presented his report in the form of the auditors' report from Price, Waterhouse & Co. I don't know of any way in which I can present this to you in detail, save through subsequent publication, but we have here two copies which any of you may see.

Price, Waterhouse & Co. state, "In our opinion, based upon such examination, the accompanying statement, together with the supporting schedule, fairly present a summary of the recorded receipts and disbursements of the association for the year ending October 31, 1938, and the balances of cash in banks as of the close of the period under review."

Their examination covered the accounts of both the Secretary and Treasurer.

TREASURER'S REPORT

PRICE, WATERHOUSE & Co.
75 Federal Street
Boston
November 17, 1938

To the Members of the
American Association of Textile
Chemists & Colorists:

We have made an examination of the accompanying statement summarizing the receipts and disbursements of the treasurer and secretary of the American Association of Textile Chemists & Colorists for the year ending October 31, 1938. In connection therewith, we examined or tested the cashbooks and other supporting records of receipts and disbursements of the treasurer and secretary and obtained information and explanations from the officials.

In our opinion, based upon such examination, the accompanying statement, together with the supporting schedule, fairly present a summary of the recorded receipts and disbursements of the association for the year ending October 31, 1938 and the balances of cash in banks as of the close of the period under review.

PRICE, WATERHOUSE & Co.

(*See statement, next page*)

President Eavenson: These accounts having been audited by a competent concern, I presume we may accept them as correct without reading the entire report. What is your pleasure?

A. R. Thompson, Jr.: I move they be so accepted and published.

. . . The motion was duly seconded, put to vote, and carried.

President Eavenson: The next item for our consideration is the proposed new Constitution.

TEMENT SUMMARIZING RECEIPTS AND DISBURSEMENTS FOR THE YEAR ENDING OCTOBER 31, 1938

asurer's Account	*Total*	*Allocation of Funds* — *Research*	*Merchandise*	*General*	*Annual Meeting*
eceipts:					
Secretary's receipts remitted to treasurer—					
Membership dues for the year ending Oct. 31, 1938	$13,337.78	$2,530.00	.....	$10,807.78	.....
Miscellaneous income (per schedule attached)....	1,812.12	265.00	$715.12	.....	$832.00
Together (see below)	$15,149.90	$2,795.00	$715.12	$10,807.78	$832.00
Research donation—Textile Foundation.....	10,666.66	10,666.66	.....	.....	.....
Interest on bank deposit.....	68.46	.....	.....	68.46	.....
Total receipts	$25,885.02	$13,461.66	$715.12	$10,876.24	$832.00
isbursements:					
Research salaries, fees and expenses.....	$11,675.15	$11,675.15	.....	.....	.....
Howes Publishing Co.—Subscriptions to American Dyestuff Reporter	5,398.75	.....	$22.50	$5,376.25	.....
Secretary's expenses, postage, etc.....	1,610.16	.....	54.24	1,481.40	$74.52
Printing, etc.	315.97	.....	.....	195.72	120.25
Merchandise purchases	265.51	.....	265.51	.....	.....
Section membership allowances.....	860.00	.....	.....	860.00	.....
Trade association dues.....	25.00	.....	.....	25.00	.....
Expense of patenting Crock-Meter.....	78.00	.....	78.00	.....	.....
Audit of treasurer's and secretary's accounts.....	75.00	.....	.....	75.00	.....
Council and other expenses.....	210.06	.....	.....	160.21	49.85
Total disbursements	$20,513.60	$11,675.15	$420.25	$8,173.58	$244.62
Excess of receipts over disbursements.....	$5,371.42	$1,786.51	$294.87	$2,702.66	$587.38
Cash in bank at October 31, 1937.....	26,208.92	7,501.20	1,063.21	16,606.50	1,038.01
Cash in bank at October 31, 1938.....	$31,580.34	$9,287.71	$1,358.08	$19,309.16	$1,625.39
The First Nat'l Bank of Boston—Savings account	$5,000.00				
The First Nat'l Bank of Boston—Checking account	26,580.34				
	$31,580.34				

retary's Account

Receipts:	
Membership dues and miscellaneous income.....	$14,246.24
Disbursements:	
Remitted to treasurer—membership dues for the year ending October 31, 1938, and miscellaneous income (see above)	$15,149.90
Bank charges	6.10
	$15,156.00
Excess of disbursements over receipts.....	$909.76
Cash in bank at October 31, 1937.....	930.00
Cash in Appleton National Bank, Lowell, at October 31, 1938.....	$20.24

W. R. MOORHOUSE, *Treasurer.*

Respectfully submitted,

SCHEDULE OF MISCELLANEOUS INCOME FOR THE YEAR ENDING OCTOBER 31, 1938

Miscellaneous Income:		
Research—		
Launder-Ometer royalties	$112.00	
Carbonizing reports	2.00	
Printing paste reports	4.80	
Wool determination reports....	1.20	
Sale of mercerizing machine....	30.00	
Services—United States Treasury Department	115.00	$ 265.00
Merchandise—		
Year books	$404.10	
Dye standards	17.00	
Knitted tubing	116.54	
Dyestuff Reporters	39.50	
Crock-meter cloth	35.65	
Crock meters	65.58	
Analytical methods	5.25	
Buttons	31.50	715.12
Annual meeting—		
Registrations		832.00
Total miscellaneous income...		$1,812.12

PROPOSED NEW CONSTITUTION

Secretary Chapin: The present Constitution states, "Proposed amendments to this Constitution signed by at least ten members, must be presented in writing to the Council at least four weeks before the next general meeting. In the notice for this meeting the proposed amendments shall be printed. At the general meeting the amendments may be discussed and amended, and may be passed to letter ballot by a two-thirds vote of those present. If two-thirds of the votes obtained by letter are in favor of a proposed amendment, it shall be adopted."

To comply with the requirement as to publishing the proposed new Constitution, considered an amendment to the old, we published this statement in the REPORTER of October 3:

. . . The Secretary then read the statement appearing on page 548 of the October 3 issue of the AMERICAN DYESTUFF REPORTER, beginning with the words, "On October 4, 1936," and ending with the words, "before adoption by the Council." . . .

Secretary Chapin: Then in this publication there follows the proposed Constitution, of which you have here photostated copies.

Subsequently two amendments were offered, and published in the REPORTER. Article IV, Section 5, now reads: "An honorary member shall be a person who has rendered distinguished service to the Textile Industry." It is proposed that the words, "or to this Association," be added.

In article V, Section 3, the wording as to what shall constitute a quorum of the Council seems somewhat vague, and this substitution has been suggested: "Twenty-five per cent of the members of the Council shall constitute a quorum." The Section as it would read amended would be, "The Council shall have full control of the affairs of the Association, subject to the limitations of the Constitution and By-Laws. The Council may make and alter By-Laws for the government of the Association. Twenty-five per cent of the members of the Council shall constitute a quorum." This amendment was considered in the light of the number present at Council meetings over a period of about three years. Twenty-five per cent seemed a reasonable expectation, and it makes the wording simpler.

The action called for in this meeting is approval of the proposed constitution, with or without these amendments. There is nothing to prevent further amendments being made from the floor; though the committee had hoped to have all amendments proposed and published before the meeting, to avoid the difficulty of wording even desirable amendments hastily in the meeting. Our first procedure might be a motion from the floor for acceptance of these amendments.

E. H. Killheffer: Mr. President, before you proceed to that motion, may I make one suggestion that I think is probably in order, if I read the Section correctly. In Article VIII, Section 2, you are providing for something which is not a major thing. It is a matter of changing the numbers of Sections, as required by amendments which may be made. You say that these changes in the order or number shall be made under the direction of the Council. Don't you really mean that they shall be made by the Council?

A. R. Thompson, Jr.; A constitutional committee might be appointed by the Council.

E. H. Killheffer: Not to change numbers, I believe. When new amendments are adopted, this gives somebody the right to revise the numbering. I think what you really mean is that the Council shall do that.

President Eavenson: That seems to me much clearer.

Secretary Chapin: It does not really alter the meaning, and it seems more to the point to say, "by the Council."

President Eavenson: It will read then, "Any changes in the order or number of the Articles or Sections of the Constitution required by an amendment shall be made by the Council." Is this amendment seconded?

. . . The amendment was duly seconded, put to vote, and carried. . . .

E. H. Killheffer: I now move, Mr. President, adoption of the other two amendments.

. . . The first amendment was seconded . . .

President Eavenson: All in favor of the amendment to Article IV, Section 5, by addition of the words, "or to this Association," will show their consent by saying "Aye"; opposed, "No." It is so ordered.

Secretary Chapin: Now, in Article V, Section 3, the proposed change is in the definition of what shall constitute a quorum in meetings of the Council.

Charles A. Seibert: To clarify this, may I ask what is proposed to give Sections representation on the Council proportionate to their Senior membership?

Secretary Chapin: It is not defined in detail in the Constitution now before us, but is to be in the By-Laws.

C. A. Seibert: That is true; but it seems to me that it has a definite bearing on this Section 3, because for some business twenty-five percent of the Council is not sufficient. With a Council of twenty members, you can readily visualize, gentlemen, that four men could alter the By-Laws of the organization.

Secretary Chapin: Amendment of the By-Laws is intended to be more carefully guarded than that, as provided in By-Laws proposed by the committee, but not now before us. Heading the publication of this Constitution there was the statement that amendment of the By-Laws is to be by letter ballot of the entire Council; but it is possible that what is thus contemplated is not properly provided for.

C. A. Seibert: This should become part of the Constitution. Once this is adopted, we have no supervision over the By-Laws.

E. H. Killheffer: Mr. President, I think the gentleman's point is well taken. The By-Laws are subsidiary to the

Constitution, which is the fundamental law of the Association. I think the difficulty could easily be remedied if we made a further amendment in Section 3 by simply adding what is stated to be the intention, something like this, "The Council may make and alter By-Laws for the government of the Association, but new By-Laws shall not be adopted except by the affirmative vote of two-thirds of the members of the Council.

Secretary Chapin: Suppose we wished to change an existing By-Law?

E. H. Killheffer: Then change the wording to, "but there shall be no alteration in the By-Laws, etc."

C. Z. Draves: May I suggest a simpler wording, "The Council may make and alter By-Laws for the government of the Association only by a two-thirds vote of its entire membership."

E. H. Killheffer: Dr. Draves' wording is better, and I will accept it.

President Eavenson: Is there any further discussion? If not, all in favor say, "Aye;" opposed, "No." It is so ordered. Is there anything else?

C. A. Seibert: I would like to propose that we insert something in Section 1 of Article VI to the same effect, to insure nominations by vote of the entire Nominating Committee.

C. Z. Draves: Insert, "by majority vote of the entire membership of the Nominating Committee."

C. A. Seibert: Yes, I offer that as a motion.

C. Z. Draves: I second that.

Secretary Chapin: I understand the motion to be that the first sentence of Article VI, Section 1, shall read, "Nominations for the offices of President and each Vice-President shall be made each year by majority vote of the Nominating Committee consisting of the Sectional Councilors."

President Eavenson: Is there any discussion of this motion? If not, all in favor show their assent by saying, "Aye;" opposed, "No." It is carried.

W. H. Cady: There is just one item to which I should like to call attention in connection with the membership of the Council. The present wording does not include the Chairman of the Research Committee. Was that an oversight?

Secretary Chapin: The present Chairman is a member of the Council for life, because he is also a Past President. Apparently the committee did not consider the situation beyond this.

President Eavenson: I should think that by reason of his office the Chairman should be a member of the Council.

E. H. Killheffer: I can't conceive of a Chairman of the Research Committee of this Association not being a member of the Council.

L. A. Olney: I think he should be a member.

W. H. Cady: If he is going to be a member of the Council, it should be in the Constitution.

E. H. Killheffer: Mr. President, I am going to suggest this wording, "The Council of the Association shall consist of a President, two Vice Presidents, a Secretary, a Treasurer, the Chairman of a Research Committee," and then as printed in this document. I so move.

C. A. Seibert: I second that.

C. Z. Draves: Then in Article V, Section No. 5, if I may add to the motion, I would suggest that this read, "The Secretary, the Treasurer, and the Chairman of the Research Committee shall be appointed by the Council."

Secretary Chapin: The suggested wording is then, for Article V, Section 2:

"The Council of the Association shall consist of a President, two Vice Presidents, a Secretary, a Treasurer, the Chairman of a Research Committee, the Past Presidents, and Sectional Councilors elected by their Sections on a basis of proportionate Senior membership to be specified in the By-Laws, provided that each Section shall have at least one Councilor." And Section 5 of the same Article will read, "The Secretary, the Treasurer, and the Chairman of the Research Committee shall be appointed by the Council."

E. H. Killheffer: I move adoption of these amendments.

. . . The motion was duly seconded, put to vote, and carried . . .

C. Z. Draves: Mr. President, I move that the proposed new constitution, as it has been amended, be submitted to letter ballot.

. . . The motion was duly seconded . . .

President Eavenson: Is there any discussion of that motion?

A. R. Thompson Jr.: Mr. President, would it not be in order to state in the letter accompanying this that this new constitution, as proposed and amended, was acceptable to the members at this meeting here today.

E. H. Killheffer: The point you are making is that to the member who hasn't been in attendance at this meeting, and who simply gets this and is asked to vote on it, it might be helpful to be informed that it has approval, with these amendments, in the Annual Meeting.

President Eavenson: If there is no further discussion, I will put this motion to a vote. All in favor show their assent by saying "Aye"; all opposed, "No." It is so ordered.

Secretary Chapin: I should like the advice of the meeting as to the manner of getting the letter ballot. For me the simplest way is to send out reply post-cards, which will at the same time insure a large vote. This may seem to some of those present a bit undignified for so important a matter. If you feel so, I will adopt whatever method you suggest and approve. My proposal is this, that we publish the Constitution as amended in this meeting, that on my post-card I ask for a vote on adoption of the Constitution as published with its amendments in the Reporter, and that the card have attached post-card for the reply.

C. A. Seibert: I think that is a very good idea.

President Eavenson: I think it is the sense of the meet-

ing that we leave that to the discretion of the Secretary.

President Eavenson: We are supposed to have a report from the Research Committee at this meeting.

L. A. Olney: The report of the Research Committee has been printed in full in the Year Book, and I think the reading of the report at this time may be dispensed with.

President Eavenson: What is your pleasure, gentlemen? It is getting late. Will someone move that the reading o this report be dispensed with?

. . . A motion was duly made, seconded and carried, tha the reading of the report of the Research Committee b dispensed with . . .

President Eavenson: A motion to adjourn is also con sidered passed.

. . . The meeting then adjourned at six o'clock . .

Luncheon Session

Annual Meeting, Atlanta, Ga., December 2, 1938

ALLEN JONES*
Presiding

THE Luncheon Session of the Eighteenth Annual Meeting of the American Association of Textile Chemists and Colorists convened in the Georgian Ball Room of the Atlanta Biltmore Hotel, Atlanta, Georgia, at one-thirty o'clock, Allen Jones, Vice Chairman, Southeastern Section, presiding.

Chairman Jones: I just want to extend a welcome to all of you who have come down here, and particularly the men who have come for the first time. I want to say that this is my first national convention.

I heard a lecture the other evening by one of those pep speakers and he told us eight things to observe to be successful in life. About the only one I remember is to make friends. So I want to take this occasion to ask you, if you haven't already done so, to introduce yourselves to all the folks round about you, and in that way we will start off a successful convention.

At this time I want to tell you that this music has been furnished by the Sycamore Band which is a part of the Avondale Mills.

I am now glad to introduce a warm friend of our Association, a man who is executive secretary of the Georgia Cotton Manufacturers' Association. If you fellows don't know that Association, it is composed of our bosses, the big shots. They are behind us.

I now take great pleasure in introducing Mr. Theodore M. Forbes, commonly known as Ted. (Applause.)

Remarks by
THEODORE M. FORBES

HON. THEODORE M. FORBES: Mr. Chairman, Ladies and Gentlemen, and Guests: I couldn't resist the temptation to tell a story, and I wouldn't endeavor to tell a story to a large gathering like this that would be new to all of you. So rather than apologize for the age of the story that I shall tell, I will preface my remarks by saying that no gentleman ever heard his friend's story. I think this one is particularly appropriate because it reminds me of the instance in which a nonentity like myself was called upon to introduce a celebrity like the speaker who is to follow me. After talking for some thirty minutes about the speaker who was to come, some wit out in the audience yelled, "That is all right. We know who the speaker is, but who the hell are you?" (Laughter).

I wrote one speech I was going to make here today because Governor Rivers was going to be here as the speaker whom I was to introduce, and then he was called on by His Excellency the President to come down to Warm Springs this morning and had to forego the pleasure of being with you. So I had to write a new speech.

But before indulging myself in the privilege which your Chairman has so graciously accorded me, I should like to bring you greetings and good wishes from the members of the Cotton Manufacturers' Association of Georgia by whom I am employed. It is a distinct honor for us to have you gentlemen hold your convention in our state, and we extend to you our fullest cooperation to the end that you may have a successful convention and that your stay in our city and our state may be pleasant in every respect.

The importance which we attach to your convention is indicated by the position and the prestige of the gentleman who will extend you an official welcome, and whom it is my privilege to present to you. As President of the Georgia School of Technology he represents one of the South's outstanding institutions engaged in the technical training of young men for the various engineering trades, such as the one in which you are engaged. No other institution has had such a vital part in the industrial development of our state. That influence will continue for many years to come because in most of our mills the positions of responsibility are held by graduates of the Georgia School of Technology.

Under this gentleman's guidance and direction, that

*Vice-Chairman, Southeastern Section.

school has assumed a place of ever increasing importance in the industrial life of Georgia and of the entire South; and its prestige and reputation in the fields of personnel training, industrial education and of research are in a very large measure due to his enterprise, his initiative, and his executive ability.

Under more favorable circumstances I might mention another field of activity in which Georgia Tech has brought fame and glory to the state of Georgia, but in view of the record established during the recent football season perhaps I should mention only the team of 1928. (Laughter)

This same gentleman has rendered very constructive service to the textile industries in another respect, because several years ago he was appointed by the President to serve as a member of the Federal Prison Industries Board, under whose supervision all industrial activities in the Federal penal system are conducted. As a member of that board and through his very constructive efforts, he has been successful in removing to some extent some of the discriminatory competition to which cotton textile mills were subjected through the operation of the cotton textile plant at the Atlanta Federal prison.

He is a gentleman and a scholar. I say that in all sincerity and not in the spirit of sarcasm in which that phrase was recently made famous. I might add that he speaks your language and he speaks ours.

As a member of his Sunday School, the class which he teaches each Sunday morning, it has been my privilege to enjoy his weekly lectures which are consistently interesting and instructive because they are based upon a literary and a scholarly background and a wealth of personal experience that few men in public life enjoy. Therefore I take particular pride and pleasure in presenting to you a gentleman of culture, courage and character, a friend for whom I have a genuine affection and respect, an educator of recognized ability and success, the distinguished president of the Georgia School of Technology, Dr. Marion Luther Brittain. (Applause)

Remarks by
MARION LUTHER BRITTAIN

DR. MARION LUTHER BRITTAIN: Mr. Chairman and Gentlemen: I particularly enjoyed those delightful words said about me, and I hope I can live up to them. It is certainly fine to hear them from my good friend, Ted Forbes.

I share your disappointment today because you expected the Governor of our great commonwealth to be here to extend these words of welcome, and as Shakespeare would say, "They are a poor thing, but mine own."

They say a curious little incident happened to me a long time ago, the very year that Secretary Forbes mentioned, January 1, 1929. We were out at the Rose Bowl. Our team that time certainly did, as you remember, pretty well. That stadium hadn't been completed. And, lo and behold, just before the game it fell in; several people were injured. They tell this tale on me that has some little truth in it, that, trying to play the part of the Southern gentleman of chivalry, I walked up there to be of help if I could and saw a big six-foot red-headed California freshman coming out from the melee with a fainting blonde in his arms, and that I said, "That is all right, son, I'll take her now." (Laughter)

They say that young man looked at me out of his steel blue eyes and gave me a shock from which I have never entirely recovered. He said, "Hell, no! There's plenty more in there. Get one for yourself." (Laughter)

I am under obligation to you men and to those executives of whom our Chairman spoke. One of them helped me more than he ever knew. He came to my office two or three years ago. He wanted to get two or three of our graduating class for his mill. I said, "I am rather interested in what you are asking. What sort of men do you want? Are you after our first honor men?"

"No, I would rather have the captain of your football team."

Then, at my look of surprise, he said, "No, I do not mean that exactly, but I will tell you what I do mean. I want an all-around man. I want a man who has respect for scholarship, in the upper half of his class, at least, and then I do want a man who takes a part in your athletic work, because we don't want a fellow to go back on us and get tuberculosis or something within a year or two after he takes up our work. We want a strong, good man, physically. Third, I would like to have a man who has sold himself to his classmates, who has proven that by virtue of being elected editor of the paper that you have, or the magazine, or of something, no matter what, who has made the students admire and love him. For we take it for granted, or at least I take it for granted, that if a man can sell himself to his schoolmates, he can sell our products to other people."

I thought that was a fine speech. It has been my duty in my lifetime to read a good many books. I was State Commissioner of Education twelve and a half years, and it was my duty there to read texts on methods of teaching and things of that sort. I think that that executive of yours told me in five minutes more than I had ever read in a hundred pages of any of those books on psychology, and so I want to pay tribute to him.

It is my duty to welcome you officially, since the Governor can't be here. He probably wouldn't have done this, but I am going to mention—first, Georgia Tech: I hope some of you will go over there. It has always been my desire that that institution be close to your hearts. I have tried, as most of you know—as some of you know, at least—to urge you to have your meetings there whenever possible, to make yourselves at home there. I want you to go over there and visit us while you are here. So, first of all, there is my welcome to Georgia Tech.

Second, I am expected to welcome you to this great

city of ours. I think it is a great city. There are people here from the North and from the East as well as from our own South. You have heard of Atlanta all of your lives, I know. Not to do so would be to argue yourselves unknown. This city is no mean city, as Paul said of his own birthplace.

A year or so ago I was out on the Pacific Coast. I was the guest of a battleship for some weeks, and it was curious to me how many people were interested in Atlanta by virtue of the book that had recently been written, "Gone with the Wind." I suspect some of you share that same curiosity. Indeed, they tried me on four different charges. When we crossed the Equator and they turned me frow a pollywog into a shellback, the one thing that they thought was most viciously criminal in me was the fact that I wouldn't tell them the whereabouts of Scarlett O'Hara and Rhett Butler. (Laughter)

So if you are interested in that book you might look around this city of ours and see if you can find some of the whereabouts of those people, even after this long period of time since Sherman came along here, so careless with his fire, and all that sort of thing. (Laughter.) Even then you might find some of the things here that you like.

Atlanta is jealous of no other city in this vicinity. I think the cities round about us know that. Jealousy is a poor kind of business, anyhow, for man, woman, child, or city. I heard of an old bachelor once who had cut quite a swath, in his opinion, with the girls through his life. At last he condescended to bestow his hand and fortune on one young lady. He took her up into the attic of their new home the day after their marriage and said, "I want to show you what a fine man you have married. Do you see all those hams hanging around the wall there?" There were some seventy-five or a hundred, a great number, nearly as many as you might find in the attic down yonder, at the place where you are to eat dinner tomorrow evening at the Atlanta Athletic Club.

He said, "Every one of those hams represents a girl who has been in love with me."

Instead of being awed, his wife patted his hand and said, "Well, now, isn't that fine? If we just had an egg for every boy who has kissed me, we could have ham and eggs for the balance of our lives." (Laughter)

Atlanta is jealous of no city, I repeat, fights her own way, and as John C. Calhoun said many, many years ago, fate itself designed this city in this part of our Southland to be the crossroads of our South, as it has proven to be.

Then, too, we welcome you to our Commonwealth, the state of Georgia, one of the problem children of the Administration economically, I believe. (Laughter.) I believe I am quoting that correctly, am I not? (Laughter.) However, I think we are working out of that very well, if we were ever aided less than others. (Laughter.) Which reminds me that I said in that Bible class, of which Secretary Forbes made mention, two or three Sundays ago, just after the visit of Jonathan Daniels here, that something funny had appealed to me in his book—"A Southerner Discovers the South," I think is the name of it. I couldn't help but quote it to those hundred men that we have out there each Sunday morning.

That book stated somewhere in its pages that the South was thought to be so poor that the only way you could make any money was either by reason of some patent medicine or a five-cent drink. When I quoted that in an assembly of business men in this town one of our fine millionaires took me up at once and said, "It isn't so." He said, "The South makes her greatest contribution to the wealth of this section by virtue of her textile mills," just what you gentlemen represent here, as I am sure is the case. And if we ever can get a little better balance between agriculture and industry and get a little more of this kind of work that you gentlemen are doing so well, there will be no economic problem with us in the South, or anywhere else. I am sure you are guiding us well along industrial lines.

The most interesting speaker, to me, that ever spoke on Grant Field down here—just three blocks from where you are seated today—was a great English statesman, the great grandson of the Duke of Marlborough, Winston Churchill. I had lunch with him in this hotel before he went down to speak in the Field, sat at a little table up in his room with himself and his niece, Lady Diana. He told me this interesting story: He said, "You know, I was a soldier as a young man, and I fought in Africa in one of those Egyptian campaigns. This strange incident happened there: We had a young soldier, a graduate of Sandhurst, corresponding to your West Point, who wasn't over twenty-two or twenty-three years old, who was called upon for a very important task. We got nervous and disturbed about the good faith of our guides and were afraid to trust them. We were out some 150 miles from Cairo in the middle of the Sahara Desert, when that impression got abroad among the leaders and among the soldiers themselves.

"So the officer in command called up this young engineer, told him the predicament and said, 'We are nearly out of water, and we know that not over fifteen or twenty miles away from us there is an oasis where there is plenty of water for this Division of 10,000 troops, but we can't trust these guides. We know the latitude and longitude of that place, and we want you to take us there.'

"The boy got out his instruments, set to work, and within twenty-four hours he had brought them there. They found a force of the enemy guarding it, and a battle ensued in which a good many were killed, this boy seriously wounded, among others. That captain in command went up to him and said, 'I thank you for the good work you have done. I thank you in the name of our ruler—the queen at that time—and in the name of this army that you have probably saved.'

"But the boy paid no heed to his words of praise. He

looked up at him with eyes fast glazing in death, and said, 'Ah, but didn't I lead you straight?'"

And so, to you fine business men, who are leading us straight, I tender my congratulations and words of welcome.

Thank you. (Applause)

Chairman Jones: I know I voice the sentiments of everybody in thanking Dr. Brittain for the wonderful talk that he has just made.

It falls to my lot next to introduce a man who is the vice president and general manager of the Avondale Mills —and, by the way, it is the same organization that has supplied our orchestra for us today. His subject is going to be, "A Mill Executive's Viewpoint on Dyeing and Finishing."

Ted Forbes sort of has it on me today, he has had Dr. Brittain to introduce, and you heard all the fine but very true things that he said about him. I am going to introduce my man as His Honor, His Excellency, His Reverence, Hugh M. Comer. (Laughter and applause.)

Remarks by

HUGH M. COMER

Hugh M. Comer: I never have been on the same platform with a college president before. I didn't mind coming over here with Governor Rivers (laughter), but I don't know whether I would have come if I had known that sharpshooter was going to be here. The last time I stood up in front of a college president was before Dr. Denny over here at the University of Alabama, and he wanted to know how come I wasn't doing any better than I was. (Laughter)

I am in a tough spot here. You fellows who know me know I am a country man, and those that don't know will find out pretty quick. (Laughter.) I have about as good a case of country heeby-jeebies as ever I had. (Laughter)

I am the type of fellow who is always in the wrong place, it looks to me like. Here you-all are, all smart, sharpshooters, every one of you. Here is the president of a college, there is Ted, here is Allen Jones, and here is the big knock himself. They tell me he is the President of the whole works. (Laughter)

And here I am talking when I ought to be listening. (Laughter.) I am the type of fellow who is zigging when he ought to be zagging. (Laughter)

I am going to have to read this thing. I am going to tell you all it is a fact, I have done my best to memorize it, but I can't memorize it so I am going to read it. (Laughter.) That is, if you all want to hear what I have got to say. (Laughter)

. . . Mr. Comer then presented his prepared paper . . .

A Mill Executive's Viewpoint on

Dyeing and Finishing*

HUGH M. COMER**

LAST May at the Georgia Meeting of your colorists and chemists, I made a little light talk on the terrible effect that different shades and finishes had on a mill manager's life. At the close of that talk you saw me encaged in a net and led off the scene by the head-keeper of the booby-hatch. Now, I am out of the hatch but am just out. The way you fellows acted let me know that everyone of you understood distinctly the problem that I discussed then and that I am going to repeat today. I also understood from you at that time that you fellows weren't having any better luck than I was and that I was dealing with a set of fellows, all crazy, and all crazy trying to finish and color. Bob Philip asked me to make this same talk that I made in Macon and, I give you my word, that is just exactly what I am going to do. I didn't have sense enough to learn my speech by heart at Macon and had to read it, and I haven't got any more sense now than I had then—So I am going to have to read it now.

But, before I get into the talk, I want to say to you brothers that I am a changed man. I never will forget that little fellow from Bibb over here talking about "tone." I didn't know anything about tone then, and I don't know now. I didn't figure I could learn so I went to the boss and said to him, "Boss, let's go back to old four and five yard sheeting," and, bless your soul, that is just about what we are fixing to do. My place is not crowded up any more with high priced salesmen in high priced cars. I hear no more the hearty laughs in our purchasing department of the dye men, and the oil men, and the men that sell other sorts of greases and gobs of whatnot. The worst sound in the world is the laugh of a salesman in the purchasing department. I like to hear the purchasing agent laugh but never the salesman. Every now and then one of the salesmen does slink by and wants to know whether I have anything personally against him.

If the various experiences that we encounter in a colored goods mill, using coarse count carded yarn, weren't

*Presented at Annual Meeting, Atlanta, Ga., Dec. 2, 1938.
**Vice-President and General Manager, Avondale Mills.

so very costly and heartrending we could get a lot of laughs out of our experiences. However, our hearts must rend because it is a fact that the mills have to furnish, not only the exact shade and finish that the individual customer desires and commands, but this shade and finish must be one of exact continuity during the life of the contract. The American customer has been trained to demand and get a wide list of samples from the mill, he having the selection of the pattern assortment that suits him most. He is trained to have these samples come to him within specified dates to meet his seasonable markets. This time element alone demands from the mill the necessity of having the goods come out right on the first trial. The method of trial by error is eliminated. Then, also the matter of approval of shade and finish is very nearly out of the mill management's hands. We have to finish a piece of goods and ask ourselves the question, "Will the customer like it?"

I have been in the mills now for twenty odd years. I have noticed that as mill men grow into their fifties and sixties that they lack a calm and peaceful countenance: that they all seem to be bald or gray and more or less jittery. Several years ago I noticed my brother Donald graying up and balding up, and his mind filled up with questions of all sorts, and this gave me some concern. Next news you know my brother Bragg, who is quite some years older than I, started running a temperature and nobody could put his finger on any local infection. This worried me a lot because Bragg is a man of some stamina. But I went along at my job feeling pretty good, thinking maybe I had some little physical and mental strength that these good brothers of mine lacked, but what a crazy thought that was. All of this time though I was at one of the nicest little mills in the country, Sycamore, making from 10's to 30's hosiery twist yarn—all grey—and it was a lovely piece of yarn, the customers were fighting for it, and all we did with our warehouses was to put cotton in them. I hadn't heard of pattern assortments, of luster, or soft finish, or hard finish. About all I had done wrong was make a few thick and thin places, winder cut a little yarn and deal out a few slubs. I hadn't run up on overheating, salt content, copper content, dullness, shading on the green side, and on the red side, and two tone, but then the next news I knew there was a shift in our organization and I found myself down at our Sylacauga group. Down there those fellows were making some plaid blankets, some beam dyed stripes and some package dyed sale yarn, and on that package dyed sale yarn is where I ran into my first grief. It seems that you can overheat this stuff and when you do that, especially if it is for the electric wire trade, it has a tendency not to wrap itself around a wire but it cracks and breaks and gives the wire man any amount of trouble, which he promptly lays in your lap—in this case—in my lap.

Most of the Sylacauga group was on grey goods and we were having some trouble delivering them to our customers as fast as we made them. We had a dye plant already, consisting mostly of beam dyeing equipment and two or three Chattanooga raw stock machines. Our feet were at least colored a light pink, having gotten them into the dye business. When we went to New York our selling agents broke the news that if we would just go into the Indigo chambray business our troubles would be over. We had a block of looms that were making 4.00 sheeting that would fit into a 3.90 chambray construction just fine—and we did this. We bought a nice big cocker machine with a 24-ball capacity: we had one of the best indigo dye men in the country, I reckon, and we prepared to just sit back and make cloth, ship it and collect money. Then the customers and the selling agents had some little disagreement as to the proper shade for the chambray, and I want to tell you men it is inconceivable, except to men like you, to realize the number of shades that can be made out of indigo. Too light; too dark; too purple; too red; too green; not blue enough. Then the feel wasn't right, it didn't have the proper handle; it was too glossy; it was too raggy; it was too stiff. Men, I felt myself slipping, but we struggled and struggled and finally, if you will excuse me, I will say that I think we have a lovely chambray, and we are trying to get this news over to the customers—so the chambray has been weathered.

I won't go into the denim question other than just to tell you that we have 750 looms on denim and bale up 18 different weights and finishes, and put-ups each week. We make enough different kinds of denim to make overalls for all the trades in the world, I reckon. Who would have thought there were 18 different kinds of overalls? Why are there so many shades of denim on the market? The man in Chicago, we will say, wants a denim dark; he wants it dark to the point of blackness. He wants the feel beefy and leathery. He wants to take it in his hand and crumble it up and feel like he has got a cow hide between his fingers and thumb, while the man in Georgia, and the man in St. Louis, wants his denim ranging from this dark color to light. He wants the white in the filling to show; he wants it soft and flexible. I understand the ladies are fixing to take up denims for slacks, and when this is done, heaven help the denim mill. We keep a staff of about four men to tell one shade from another and then we have another half-dozen or so hanging around trying to decide which piece they like best.

Now, having gotten over the chambray, we ran into a block of four-box 20-harness dobby looms. One time we made up 964 samples to go into this block, not a large block either, and didn't sell a pattern because they were too soft and raggy, or much too stiff, and before the adjusting of the finishing experiment could be made, the season was out and the samples were ours and the customer raising high and low. Then we put them into the upholstery business; the looms were small looms, 18 inch beams, little-bitty shuttles—looked like they were about

big enough to hold yarn to make little-bitty thin things for the ladies. But in the upholstery, we didn't have any yarns in the shuttles finer than 11's or coarser than 3's. We had to hire extra men to carry out the bobbins. By this time I am slipping pretty badly, mainly because we had been matching shades that belonged to somebody else, colors that weren't ours. Then we ran into old man color "fast-to-light" and there was plenty of grief. Then before we went stark crazy we got this stuff out of the looms and then jumped right into some trouble for fair—vat dyed shirting—and this is where I ran into sure enough grief from pattern assortment and this is when the dyehouse had a fit. We had 50 colors, most of which were raw stock dyed, and as you know, some of them would card and some wouldn't, and those that would card wouldn't spin; then we found out that so far as the blacks and the blues were concerned that you could get sulfurs and vats mixed in the mill and next news you know we would have a piece of cloth come back with a black warp thread bleached out white as snow. The yarns did fit the beams and shuttles, but we couldn't run the balance of the mill because we were having so much trouble getting the shades and the luster in the dyehouse for these shirting goods. We have now finished with the shirting and the dobbies have been raised but the boxes are whamming away on plain checks—and that trouble is over.

But now, we have gone into more sale yarn. We have put some dobbies on our 60 inch looms. We have gone into the ticking business. We have run into the problem of a slasher set of 17 section beams, each of the sets short because of the pattern assortment and delivery schedule, and when you run into that problem bubber, the profit goes out of the doors. We have begun more or less to spin cut rayon and wool mixtures, all colors and types of dyes. We didn't start this, though, until our minds went blank, as we know what we are in for and so do you. We are making yarn for the braiding trade. Not long ago I was in New England in a braiding mill and my friends were showing me two pieces of braiding. They were trying to point out to me the difference in luster between the two pieces and what a terrible thing it was because these different braids were not matched. I thought to myself "Maybe he is going to use his braid to braid up the queen's ears" and I asked him "Partner, what are you going to do with the braid?" And it developed that they were going to make shoe strings out of it—shoe strings that go into a package that sells for a nickel, and it is too bad that some had a little brighter luster than the others. These shoe strings were brown and I have at last to come to the inevitable—we have 200 different shades of brown. No mind can stand up under the terrific problem of delivering to his customer matches from this assortment of color. We can't tell some of the shades apart to save our life.

My office is in a grove of pine trees that stands between me and the mill. It used to be quiet and peaceful, but up to now, it has been crowded up with all sorts of finishing and dyeing salesmen. Everybody with a formula is on hand and under foot.

Now, I am going to close by telling you the beginning of our chemical department and the bringing into the mill of a chemist. He is here today. I hope he is a smart fellow —I am sure he is, but if he is not—we are in a mess.

When I first came to Sylacauga I noticed a young man out of the corner of my eye, but I didn't pay him much attention because at that time I had the package dyeing and the indigo and a few other light troubles that follow a colored goods mill man. But I did see him. A year or two after that I noticed him again and I had never seen such a change in a fellow. Sort of like the difference between the old caterpillar and the butterfly, so I called him off and I said to him, "Partner, you look like the 'wholesome hand' has been put on your shoulder. A few years ago when I first saw you, you looked rather shabby —more like a tramp—now you ride up here in a big automobile, a brand new suit of clothes, pointed up shoes and all sorts of fittings, you look prosperous—what has happened?" "Why," he says, "I am doing good business. I am selling a lot of stuff. I sell you a lot of stuff." "Well," says I to myself, "this is bad." So I gave out the word to the purchasing department that the next time this chap showed up that I wanted to do the trading with him, and next news here he comes and I asked him "What do we buy from you?" He told me. "What do we pay you for this stuff?" He said, "8c a pound." "What would you do if I were to offer you 6c a pound?" "I would take it. I would take 4c a pound" and he laid his hand on my shoulder in a reassuring manner and said "But if I charged only 4c a pound for these materials I would give you 4c a pound worth of value." And I asked him "How do I know that I am not giving you 8c a pound for this stuff and you are shipping me 4c worth of value?" Then he broke down and confessed "You don't know." "Well," says I, "I am fixing to know from now on—so goodby." Then I got on the telephone and called up a few head chemists and said "Get me a man down here quick." So, when I look out and see all these fine automobiles, and all these dressed up colorists and chemists selling things I sure hope our man in the laboratory knows his stuff. Now this new angle to our business has been brought about because of the mill's meeting the salesmen's and customers' wishes as to color and shade, finish and handle, however fine the question might be. These customer wishes have established in the mills a research laboratory, as the mills in their constant effort try not only to meet the demands that are made on them but to develop finishes and styles of their own. The mills today, I think, are constantly alert to meet customer demands and to anticipate customer wishes. These research and analytical laboratories are very expensive, expensive beyond the extent that we have succeeded in getting over to our salesmen and customers—so in summarizing, I will say

what with 964 samples—no sales—too glossy; too dull; 9 shades of indigo chambray, too light; too dark; 18 shades of denim, too this; too that; 200 shades of brown, and heaven knows how many other colors, is it any wonder that I am ready for the hatch?

But, as I said in the beginning, I have been in the hatch and am now out, badly mangled though and with a lot of dark memories. I am out because, as I said before, I found out when I had enough—so when I look across the lovely grove outside my office window and see the pine trees growing tall and stately, the magnolias at their feet, and no salesmen, no cars—I am happy.

———♦ ♦———

Chairman Jones: I know I voice the sentiments of the whole group, that Hugh did a good job. I want to say one other thing, I hadn't thought of it in this light before, but I think it was a fine thing to bring the AATCC down here so they can help Hugh out in his problems. (Laughter)

I want to make several announcements about the program. . . . Announcements were made . . .

At this time it gives me a great deal of pleasure to introduce the President of our Association. I noticed him listening very closely to what Mr. Comer had to say about these various difficulties of finishing and so forth. He heads up the crowd, and a good many of the suppliers of the various chemicals, dyestuffs and oils, and finishing materials belong to the Association. So I hope our President will bear that in mind and when he goes back home will straighten out those boys.

It gives me a great deal of pleasure to introduce Mr. Eavenson, who will take charge of this meeting. (Applause)

Remarks by
ALBAN EAVENSON

PRESIDENT EAVENSON: Mr. Jones, and Members of the AATCC: Mr. Philip here has the knack of telling you some very startling things. A few minutes ago he told me it was my duty to officially open this Annual Meeting.

Well, I don't want you to feel scared because I am not going to launch out into an inaugural address, or anything of that sort. I have neither the inclination nor the ability to do so, particularly after the splendid addresses that we have all heard. I will say, however, that if there is any place in the world where it would be easy to make a speech it is right here in Atlanta, for you have made us all feel very much at home.

I think that this large gathering is an expression of tribute and confidence that our friends here in Atlanta will treat us royally, and they are doing this one hundred per cent.

I declare this meeting officially opened.

Thank you, gentlemen. (Applause.) . . . Whereupon the session adjourned at two forty-five o'clock . . .

ONE HUNDRED AND TWENTIETH COUNCIL MEETING

THE Council held its 120th meeting in the Atlanta Biltmore Hotel on Friday morning, Dec. 2, 1938. Present were President Alban Eavenson, presiding; Duncan Ferguson and Arthur R. Thompson, Jr., Vice-Presidents; Louis A. Olney, Chairman of the Research Committee; William H. Cady, Elvin H. Killheffer, Robert E. Rose and P. J. Wood, Past Presidents; Harold DeWitt Smith, Councilor-at-Large; B. C. Blowney, Henry F. Herrmann, Raphael E. Rupp, and Ben Verity, representing Mid-West, New York, Piedmont and Rhode Island Sections, respectively; W. D. Appel, K. H. Barnard, J. R. Bonnar, H. D. Clayton, D. S. Culberson, C. Z. Draves, A. H. Gaede, W. E. Hadley, L. S. Lang, G. A. Moran, R. W. Philip, T. R. Smith, H. W. Stiegler, W. A. Wolhar and Harold C. Chapin, Secretary. The Secretary's report of the 119th Council meeting, and balance sheet of Nov. 26, were accepted.

In accord with the system of rotation adopted by the 99th Council meeting, Boston was chosen for the Annual Meeting of 1939, New York for the meeting of 1940, and a location to be selected by the Piedmont Section for the meeting of 1941. Appropriations were voted for researches on standards of crease-resistance and permanence of finish and on detergents; and for general research equipment. It was voted that the President appoint a committee of three on Coordination of Standards, to consider relations with other technical and consumer organizations in this respect.

The following were elected to the classes of membership specified, as of thirty days from publication of applications provided no objection be received meanwhile by the Secretary:

Active

G. H. Coates	W. E. Kemmerich	W. J. Scanlon
J. E. Cole	F. E. Kilby	S. E. Shepard
S. M. Conn	J. B. Lewis	F. Spencer
A. N. DeVito	R. T. Lindsey	W. O. Taubert
C. E. Doughtie	W. D. Lutz	H. Taylor
L. W. England	A. E. Moffitt	M. Tereschischkin
R. W. Gaunt	S. A. Moffitt	G. P. Viegelmann
E. L. Greenbaum	A. N. Mooradian	O. L. Walsh
S. Jackson	C. M. Robbins	G. F. Walz
A. R. Jenny	B. A. Roberts	

Junior

C. Conradi	I. Greece	R. M. Tarrant

Associate

C. F. Bingham	H. L. Lobsenz	C. R. Mitchell
E. M. DeNoon	C. H. Ludders	A. J. Patenaude
R. T. Fagan	H. C. Lummus	F. C. Van-Ess
L. T. Lanier	H. R. McCray	

Student

S. E. Bagley, Jr.	N. H. Goldberg	W. H. Ritter
J. W. Beattie, Jr.	H. M. Fry	W. L. Schleyer
J. H. Biery	R. J. Hoey	J. E. Tillman

Secretary's Balance Sheet, Nov. 26, 1938

	Applications	*Dues Regular and Reinstate.*	*Dues Corporate and Sustain.*	*Miscellaneous*	*Bank Charges*	*Totals*
Received by Secretary, Nov. 1, 1937, to Oct. 15, 1938	$1,755.00	$8,970.21	$2,530.00	$1,799.51	—$5.85	$15,048.87
Received by Secretary, Oct. 15 to Oct. 29, 1938	67.17	21.25		12.61*		101.03
Total received and transmitted to Treasurer in fiscal year	1,822.17	8,991.46	2,530.00	1,812.12	— 5.85	15,149.90
Received by Secretary, Oct. 29 to Nov. 26, 1938	197.50	4,264.25	1,935.00	415.31**	— .25	6,811.81
Transmitted to Treasurer	137.50	3,412.50	1,855.00	392.61		5,797.61
Leaving to order of Secretary	60.00	851.75	80.00	22.70	— .25	1,014.20

MISCELLANEOUS ITEMS			
Year Books	$4.50	Year Books	$402.31
Knitted tubing	4.71	Dyed standards	8.00
Crock cloth	3.40	Dyestuff Reporters	3.40
		Carbonizing reports	1.60
	$12.61*		$415.31**

J. H. Boulanger, B. L. Lizak, A. M. Wells, R. G. Chartener, J. P. Patsourakos, H. J. Rotters, J. P. Felder, S. J. Rexon

The following were transferred from other classifications to Active membership: M. F. Davis, J. R. Morton, R. J. Quigg, G. S. McCarty.

Respectfully submitted,

HAROLD C. CHAPIN, *Secretary.*

ONE HUNDRED AND THIRTEENTH MEETING OF THE RESEARCH COMMITTEE

THE 113th meeting of the Research Committee followed the Council meeting on Friday morning, Dec. 2, with essentially the same attendance, and with Chairman Louis A. Olney presiding. Appropriations for research were recommended by the Committee, and voted by the reconvened Council as reported.

Mr. Appel reported for his Committee on Fastness to Light. Mr. Bonnar was appointed a member of this committee. Thanks were voted to Mr. Christison and the Arlington Mills for preparation of light fastness standards.

Mr. Moran discussed washing fastness tests. Mr. Clayton, reporting for the Committee on Shrinkage, stated that his committee was not prepared to indorse any present tests for measuring shrinkage of rayon or wool. Mr. Barnard reported for his Committee on Crease-Resistance and Permanence of Finish.

Respectfully submitted,

HAROLD C. CHAPIN, *Secretary.*

MEETING, PHILADELPHIA SECTION

THE regular meeting of the Philadelphia Section was held at the Penn A. C., Friday evening, January 20, 1939, with William Ebersold, chairman, presiding.

E. W. Pierce of the Ciba Company spoke and his subject was "The Major Attainments in Chemistry for 1938" as applied to the textile industry.

The motion picture — "Manufacturing Carpets and Rugs" was shown through the courtesy of C. P. Cochrane Co., with R. E. Oberholtzer, mechanical engineer, as commentator.

Ninety-two members attended the dinner while 116 members were present for the meeting.

Respectfully submitted,

J. P. CONAWAY, *Secretary.*

MEETINGS, NEW YORK SECTION

October Meeting

PLACE: Swiss Chalet, Rochelle Park, N. J.
Date: Friday, October 28th, 1938.
Dinner—6:30 P. M.
Meeting—8:00 P. M.

Speaker: Mr. Jerome D. Chaky, Superintendent of Dyeing and Finishing, Amity Piece Dye Works, Brooklyn N. Y.

Subject: "The Management of Dyeing and Finishing Plants."

Special Demonstration—New Daylight Color Matching Lamp—Rainbow Light, Inc., 36-06 43rd Avenue, Long Island City, N. Y.

Total attendance: Seventy-five (75).

November Meeting

PLACE: Swiss Chalet, Rochelle Park, N. J.
Date: November 25th, 1938, Friday evening.

Speaker: Dr. J. E. Smith, Technical Laboratory, E. I. du Pont de Nemours & Company.

Subject: "Effect of Surface Active Agents in Dyeing."

Total attendance: Fifteen (15).

Unfortunately attendance at this meeting was limited due to a severe snowstorm which prevented many members from attending.

Respectfully submitted,
P. J. KENNEDY, *Secretary.*

MEETING, SOUTH CENTRAL SECTION

THE mid-winter meeting of the South Central Section was held on January 28th at the Read House in Chattanooga, Tennessee.

Approximately seventy-five members and their friends were present for the banquet and meeting.

A motion picture was presented by Mr. Wm. J. Kelly of the Burkhart-Schier Company, which was of particular interest as it showed the progress of the textile industry in Chattanooga in all types of textile plants.

Following the program the annual election of officers for the year was held. Mr. Nestor Grotelueschen of the Magnet Mills, Inc., Clinton, Tennessee, was elected Chairman for this year. Mr. Fletcher Kibler of the United Hosiery Mills, Chattanooga, Tennessee, was elected Vice-Chairman. Mr. Andrew Kelly of the Burkhart-Schier Company, Chattanooga, Tennessee, was elected Treasurer. Mr. W. S. McNab of Quaker City Chemical Company, Knoxville, Tennessee, was elected Secretary.

Mr. Grotelueschen presided over the meeting and reported a growth of 32 new members for the past year.

This was one of the best attended and most enjoyable mid-winter meetings of this Section.

Respectfully submitted,
W. S. MCNAB, *Secretary.*

APPLICANTS FOR MEMBERSHIP

Active

Andrew E. Barrett—Engineer, Armour & Co., North Bergen, N. J. Sponsors: A. R. Thompson, Jr., A. T. Brainerd.

Charles W. Berg—Chemist, Charles W. Berg Laboratories, Philadelphia, Pa. Sponsor: R. W. Delaney.

Samuel F. Bramble—Textile Colorist, du Pont Co., Wilmington, Del. Sponsors: P. L. Speakman, C. A. Seibert.

A. B. Bullington—Salesman, Industrial Products, Inc., Greenville, S. C. Sponsors: H. E. Kiefer, Jr., W. B. DePass.

B. F. Burnett—Superintendent, Southeastern Finishing Co., Huntsville, Ala. Sponsors: D. A. Torrence, W. C. Cobb.

John H. Coogan, Jr.—Textile Chemist, Arnold Hoffman Co., Providence, R. I. Sponsors: R. Haworth, T. H. Roberts.

James E. Cousineau—Textile Chemist, U. S. Finishing Co., Norwich, Conn. Sponsors: W. H. Cady, L. H. Bailey.

Edwin A. Demuth—Dyer, Gotham Silk Hosiery Co., New York, N. Y. Sponsors: L. S. Zisman, C. E. Moorhouse.

Byron E. Dodd—Manager Textile Sales, Southwest, Dixie Chemical Products Co., Birmingham, Ala. Sponsors: D. S. Culberson, M. J. Hoffman.

M. J. Dorcas—Specialty Dept. Manager, Carbon Sales Div., National Carbon Co., Cleveland, Ohio. Sponsor: H. C. Chapin.

Abraham R. Goldfarb—Chief Chemist, Lawrence Richard Bruce, Inc., New York, N. Y.

Frank G. Gennusa—Head Colorist and Supt., Melville & Co., Bronx, N. Y. Sponsors: F. Gonnerman, P. F. Ernst.

Herman Hardwick—Hosiery Dyer, Cambria Silk Hosiery Co., Philadelphia, Pa. Sponsors: H. S. Travis, J. P. Conaway.

Carl A. Henlein—Lake Specialty Dept., General Dyestuff Corp., New York, N. Y. Sponsors: H. C. Borghetty, J. R. Bonnar.

Geo. Lewis Joblon—Head Colorist, Blum Screen Print Wks., Brooklyn, N. Y. Sponsors: F. L. Gonnerman, P. F. Ernst.

Frank L. Kendall—Dyer, Draper Bros. Co., Canton, Mass. Sponsors: M. P. Graham, A. H. Sampson.

Barnett B. Langston—Color Shop Overseer, Pacific Mills, Lyman, S. C. Sponsors: G. Chapin, R. E. Rupp.

Harold H. Leary—Vice-Pres., Leary's Cleaners & Dyers, Rochester, N. Y.

Alexander N. McFarlane—Technical Service, Corn Products Refining Co., Greenville, S. C. Sponsors: C. N. Rabold, R. E. Rupp.

Francis Edw. McKay—Salesman, General Dyestuff Corp., San Francisco, Cal. Sponsors: R. Harrison, D. F. Driscoll.

Ernest L. McLellan—Asst. to General Supt., The Alden Mills, New Orleans, La. Sponsors: D. S. Culberson, M. J. Hoffman.

James M. Mozley—Asst. Manager, Charlotte District Office, Monsanto Chemical Co. Sponsors: H. G. Miller, L. W. Sherrill.

Martin W. Mueller—Dyer and Chemist, Phoenix Hosiery Co., Milwaukee, Wis. Sponsors: C. M. Robbins, J. Wauters.

Harris V. Petelle—Textile Chemist, Technical Service, Corn Products Refining Co., Edgewater, N. J. Sponsors: J. F. Corbett, A. E. Hirst.

Robert W. Pinault—Chemist, Lincoln Bleachery, Lonsdale, R. I. Sponsors: F. B. Morton, W. A. Lord.

A. K. Scribner—Asst. Manager, Virginia Smelting Co., West Norfolk, Va. Sponsors: H. E. Kiefer, Jr., W. B. DePass.

J. Harrel Shipp—Director of Research, du Pont Co., Wilmington, Del. Sponsors: C. A. Seibert, P. L. Speakman.

Norman G. Sixt—Chief Chemist, Carolina Aniline & Extract Co., Charlotte, N. C. Sponsors: H. H. Sims, G. S. McCarty.

S. Barton Sklar—Consulting Chemist, New York City. Sponsor: L. J. Roos.

A. B. Stonstrom—Colorist, Pacific Mills, Lyman, S. C. Sponsors: G. Chapin, R. E. Rupp.

James W. Swiney—Asst. Supt. Bleachery, Fulton Bag & Cotton Mills, Atlanta, Ga. Sponsors: R W. Philip, C. A. Jones.

Paul A. Tapis, Jr.—Textile Chemist and Dyer, Model Dyeing & Printing Co., Woonsocket, R. I. Sponsors: W. H. Hutchison, R. R. Farwell.

James E. Weaver—Overseer of Wet Finishing, Eagle & Phenix Mills, Columbus, Ga. Sponsors: E. A. Feimster, Jr., W. C. Hunter.

Carl E. Weber—Manager and Demonstrator, Gebrueder Weber, Zurich, Switzerland. Sponsors: W. R. Moorhouse, R. E. Derby.

Jesse Whitworth—New York, N. Y. Sponsors: A. A. Cook, J. Zaparanick.

Henry I. Wilcox—Dyer, Hudson Silk Hosiery Co., Charlotte, N. C. Sponsors: L. M. Boyd, W. A. Daniel.

Edward E. Wild—Asst. Chemist, Botany Worsted Mill, Passaic, N. J. Sponsors: P. M. Otto, D. Y. Miller.

Kurt J. Winter—Sales Correspondent and Chemist, du Pont Co., Wilmington, Del. Sponsors: R. A. Shimp, G. W. Grant.

Junior

Richard O. Barry—Chemist, The Apponaug Co., Apponaug, R. I. Sponsors: R. A. Carroll, H. B. Sturtevant.

Otto W. Chadbourne—Textile Chemist and Colorist, Ciba Co., Inc., New York, N. Y. Sponsors: G. Walsh, H. C. Mullner.

Dominic Franceskетti—Boss Dyer, Wm. E. Wright & Sons Co., West Warren, Mass.

M. E. McKinney—Color Shop Overseer, Pacific Mills, Lyman, S. C. Sponsors: G. Chapin, R. E. Rupp.

Leigh S. Rice—Textile Colorist, du Pont Co., Wilmington, Del. Sponsors: P. L. Speakman, C. A. Seibert.

J. A. Woodruff—Research Dept., Dyestuffs, Sidney Blumenthal & Co., Shelton, Conn. Sponsors: H. H. Taylor, W. C. Lindsly.

Associate

Ingram Dickinson—Treasurer, Southern Belting Co., Atlanta, Ga.

Arthur F. Fentress — Salesman, B. F. Goodrich Co., Waverly, Tenn.

Chester M. Goodyear—Southeastern Sales Representative, The Hubinger Co., Atlanta, Ga.

Charles J. Haas—President, Haas-Miller Corp., Philadelphia, Pa.

Frank T. Hardwick—Secretary, Hardwick Woolen Mills, Inc., Cleveland, Tenn.

Frank D. Jacoway—Salesman, N. Y. and N. J. Lubricant Co., Decatur, Ga. Sponsor: L. L. Baker.

Paul A. King—Salesman, National Carbon Co., Birmingham, Ala.

Guy Mankin—Sales Engineer, L. J. Wing Mfg. Co., Atlanta, Ga.

Lee N. Manley—Sales Representative, E. F. Houghton & Co., New Orleans, La.

George F. Melville—Treasurer, Melville & Co., Bronx, N. Y. Sponsors: F. L. Gonnerman, P. F. Ernst.

Otis F. Nixon—Vice-Pres., Industrial Supplies, Inc., La Grange, Ga.

T. W. Piper—Asst. Manager, Hart Products Co., Fairfax, Ala. Sponsors: L. L. Baker, R. P. Smith.

Samuel P. Rakestraw—Salesman, Seydel-Woolley & Co., Atlanta, Ga.

William H. Shields—Sales and Technical Service, Emery Industries, Inc., South Orange, N. J.

E. Lee Talman—President, Industrial Supplies, Inc., La Grange, Ga.

Leonard G. Tubbs—Manager, Arnold, Hoffman & Co., New York, N. Y. Sponsors: W. Witte, A. F. Johann.

Student

P. O. Anderson—Alabama Polytechnic Institute. Sponsor: A. R. Macormac.

H. L. King, Jr.—Alabama Polytechnic Institute. Sponsor: A. R. Macormac.

A. W. Mungall—Alabama Polytechnic Institute. Sponsor: A. R. Macormac.

W. T. Liu—Leeds University, England. Sponsor: J. B. Speakman.

I. M. Bethel—Lowell Textile Institute. Sponsor: L. A. Olney.

A. M. Campbell—Lowell Textile Institute. Sponsor: L. A. Olney.

J. S. Gill—Lowell Textile Institute. Sponsor: L. A. Olney.

M. E. Keizer—Lowell Textile Institute. Sponsor: L. A. Olney.

A. W. Lanner—Lowell Textile Institute. Sponsor, L. A. Olney.

N. J. Manning—Lowell Textile Institute. Sponsor: L. A. Olney.

E. F. Maslanka—Lowell Textile Institute. Sponsor: L. A. Olney.

W. A. Nelson—Lowell Textile Institute. Sponsor, L. A. Olney.

A. F. Nuttall—Lowell Textile Institute. Sponsor: L. A. Olney.

J. F. Wessells—Lowell Textile Institute. Sponsor: L. A. Olney.

M. R. Woodard—Lowell Textile Institute. Sponsor: L. A. Olney.

Jos. Dias—New Bedford Textile School. Sponsor: F. E. Busby.

D. T. Smith—New Bedford Textile School. Sponsor: F. E. Busby.

J. K. Frederick—Rhode Island School of Design. Sponsor: S. I. Reichart.

Applications for transfer to Active Membership. *P. P. Dubiel, E. I. Stearns, Jr., W. O. Neeb.*

CALENDAR OF COMING EVENTS

Annual Meeting, Inter-Society Color Council, Auditorium of the Electrical and Gas Association of New York, 480 Lexington Ave., New York, N. Y., February 23, 1939. Members of the A.A.T.C.C. are invited.

The program follows:

9:30 A.M.—Business Session.

2:00 P.M.—Technical Session on Color Tolerances.

The Physics of Color Tolerance—Deane B. Judd; The Psychophysics of Tolerances — Edwin G. Boring; The Ratio Method in the Review of the Munsell Colors—Sidney M. Newhall; Color Tolerances as Affected by Changes in Composition and Intensity of Illumination and Reflectance of Background — Harry Helson; Representation of Color Tolerances on the Chromaticity Diagram—David L. MacAdam; Specification of Color Tolerances at the National Bureau of Standards—Deane B. Judd; Industrial Color Tolerances—Isay Balinkin.

8:00 P.M.—Popular Session: Parade of Color.
Color in Medicine—E. N. Gathercoal; Color in Paper—J. L. Parsons; Color in Textiles—W. D. Appel; Color in Industry—H. Ledyard Towle; Color in Lighting—R. G. Slauer; Color in Psychology—M. J. Zigler; Color in Fashion—Elizabeth Burris-Meyer.

NOTE: Admission to the evening session is by ticket only; they are available without cost upon application to the secretary, Dorothy Nickerson, c/o Bureau of Agricultural Economics, Washington, D. C. Send stamped, self-addressed envelope.

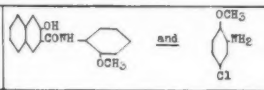
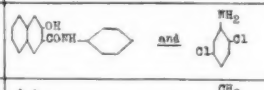
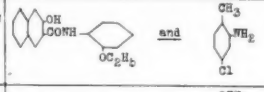
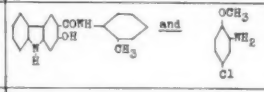
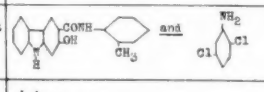
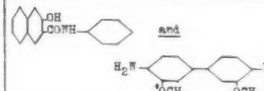
Meeting, New York Section, Swiss Chalet, Rochelle Park, N. J., February 24, 1939, 8 P. M. Dinner at 6:30 P. M. Speakers: John H. Faunce, American Rolling Mills; Subject: "Stainless Steel as Applied to the Dyeing and Finishing Industry"; Hector Borghetty, General Dyestuff Corp.; Subject: "Auxiliary Products for Textile Use."

Meeting, Philadelphia Section, Penn A. C., Philadelphia, Pa., March 3, 1939.

Naphthol AS Type Dyes

(Continued from page 84)

(TABLE VI—Continued)

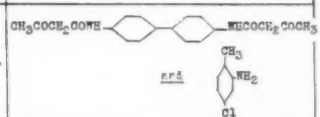
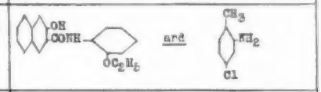
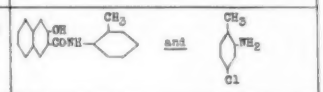
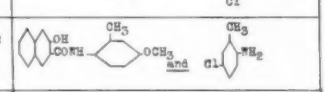
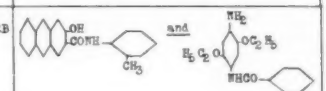
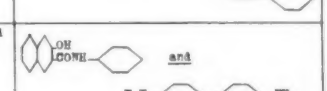
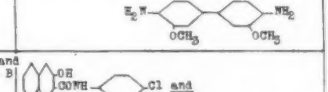
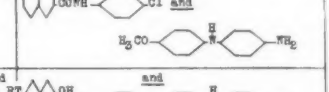
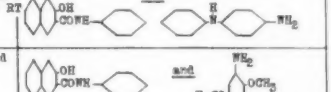
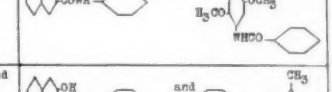
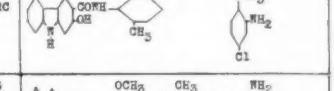
Rapid Fast Red RH	Naphthol AS-OL and Fast Red R	
Rapid Fast Bordeaux B	Naphthol AS-BO and Fast Red B	
Rapid Fast Scarlet GH (This is also reported as Rapid Fast Scarlet LH)	Naphthol AS and Fast Scarlet 2G	
Rapid Fast Scarlet RH	Naphthol-ortho phenetide of BON and Fast Red KB	
Rapid Fast Brown 1BH	Naphthol AS-LB and Fast Red RC	
Rapid Fast Brown 2RH	Naphthol AS-LB and Fast Scarlet 2G	
Rapid Fast Blue B	Naphthol AS and Fast Blue B	

PART VIII. CHEMICAL CONSTITUTION OF THE RAPIDOGEN TYPE COLORS

In the preceding tables the author attempted to check the chemical constitution of the material presented from three sources. In the following table (VII), owing to the recency of, and secrecy surrounding the exact chemical constitution of this type of color, a thrice check was impossible. However, the material was derived from sources believed authoritative, and any material which came to hand and was considered very doubtful has been deliberately deleted. The author would welcome any additions or corrections in the same. The stabilizers have not been given and the reader is referred to a later section describing the same. It must be remembered that the table below only lists the fundamental or starting color components which are put together in certain compatible ways later described to yield the commercial color as it is known to most of us.

In Table VIII, the Diagens are compared to the Rapidogens. It was originally intended to place in this table all of the colors which were available on the American market and comparable. However, lack of full information has prevented this from being carried out at the present time. In comparing the Diagens and Rapidogens, it is to be borne in mind that while the color components may be similar, the stabilizers are quite likely to be different.

TABLE VII

Trade Name	Chemical Constituents by Trade Names	Chemical Formulae of Fundamental Constituents
Rapidogen Yellow GS (Also referred to as Rapidogen Yellow G)	Naphthol AS-G and Fast Red KB	
Rapidogen Orange G	Naphthol AS-D and Fast Orange GC (or G)	
Rapidogen Scarlet R	Naphthol - the ortho phenetide of BON and Fast Red KB	
Rapidogen Red G	Naphthol AS-D and Fast Red KB	
Rapidogen Red R	Naphthol AS-OL and Fast Red RC	
Rapidogen Red 1R	Naphthol AS-LT and Fast Red TR	
Rapidogen Green B	Naphthol AS-GR and Fast Blue 2B	
Rapidogen Blue B	Naphthol AS and Fast Blue B	
Rapidogen Blue BW	Naphthol AS-E and Variamine Blue B	
Rapidogen Blue 1B	Naphthol AS and Variamine Blue RT	
Rapidogen Blue R	Naphthol AS and Fast Blue 2R	
Rapidogen Violet B	Naphthol AS and Fast Violet B	
Rapidogen Brown 1B	Naphthol AS-LB and Fast Red RC	
Rapidogen Brown R and 1R	Naphthol AS-BG coupled with Fast Scarlet GC or Fast Scarlet 2G	

In Table VIII-A, the Rapidogens are compared to the Pharmasols.

METHODS OF STABILIZING THE AS COLORS

There are several ways of stabilizing the insoluble azo colors, but in general these fall under two objectives, namely, the stabilization of the diazo salts for purposes of storage,

TABLE VIII

Diagen Colors		*Rapidogen Colors*
Diagen Yellow AGL	SIMILAR TO	Rapidogen Yellow 13G
Diagen Orange MG		Rapidogen Orange G
Diagen Scarlet AR		Rapidogen Scarlet RS
Diagen Scarlet MG Conc. Sol.		Rapidogen Scarlet RS
Diagen Red AG		Rapidogen Red GS
Diagen Red MG Conc. Sol.		Rapidogen Red GS
Diagen Red AMX		Rapidogen Red GS
Diagen Red AR		Rapidogen Red RS
Diagen Blue MGR		Rapidogen Blue N
Diagen Black DM		No prototype
Diagen Black MR		No prototype
Diagen Dark Brown AR		No prototype

TABLE VIII-A

Rapidogen Colors		*Pharmasol Colors*
Rapidogen Blue BN	SIMILAR TO	Pharmasol Blue GN
Rapidogen Blue BNN dbl. sol.		
Rapidogen Blue D		Pharmasol Blue GD
Rapidogen Bordeaux R		Pharmasol Bord. BN
Rapidogen Brown GN		Pharmasol Brown G
Rapidogen Orange R		Pharmasol Orange
Rapidogen Red GS		Pharmasol Red G
Rapidogen Red RS		Pharmasol Red R
Rapidogen Scarlet RS		Pharmasol Scarlet G
Rapidogen Yellow G		Pharmasol Yellow GN

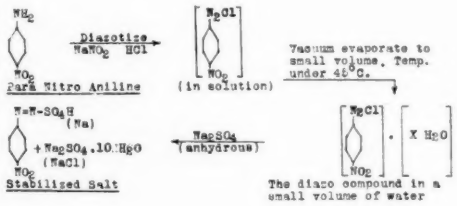
and the stabilization of the diazo salts for purposes of application. To the first of these is given the name of "active stabilized diazo compounds," and to the second, "passive stabilized compounds." In the former, upon dissolving in water or alcohol the compounds hydrolyze almost immediately and are capable of reacting instantaneously as diazo ions with a first component if present; whereas in the passive type of stabilized diazo compounds, no hydrolysis occurs on dissolving in water, but are split by other media such as acid or steam. In Part IX the active stabilized diazo compounds—such as simple stabilized salts—will be discussed, while in Part X the passive stabilized type of stabilized diazo compounds will be discussed. This passive type includes such trade products as the Rapid Fast Colors, the Rapidogens, Diagens, and Pharmasols.

PART IX. ACTIVE STABILIZED DIAZO COMPOUNDS—STABILIZED SECOND COMPONENTS

Due to the desire to use naphthol salts instead of having to diazotize the bases before use, several methods have been worked out to form a stable, water soluble diazonium salt. By active stabilized diazonium compound is meant, as explained above, a diazonium compound treated so that it can be made and kept for some length of time as a dry powder, under ordinary conditions of storage, and which when dissolved in water, would at once behave as a diazo compound capable of coupling with a first component if present. Several types of active stabilized diazonium compounds are made as denoted below. The author does not propose to list all the methods.

A. Those Stabilized as Sulfates or Chlorides of Diazo Salts

These were at first stabilized by forming an acid solution of the diazonium compound. This solution was then evaporated down to a small volume by using vacuum distillation, then adding an anhydrous inorganic salt such as sodium sulfate to take up and bind the rest of the liquid water in the form of Glauber's salt, $Na_2SO_4 .10\ H_2O$, that is, in the form of water of crystallization. Aluminium sulfate was used sometimes in place of sodium sulfate. The other alums were also employed likewise. A solid resulted which was ground up. This procedure may be represented:



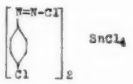
Instead of following the above method, the para nitro aniline could be diazotized in strong sulfuric acid instead of hydrochloric acid, by nitrous acid gas, then the water taken up with anhydrous sodium sulfate.

These solid compounds are easily soluble in water, and give the diazo ions "active" or ready to combine with the other component.

The acid diazonium sulfate is formed in part along with the Glauber's salt. The nitroanilines, some halogenated anilines, and some nitro or chloro substituted amino phenol ethers are said to be stabilized by this process. The presence of an ortho ether group in the amine sometimes helps greatly to stabilize certain diazonium salts.

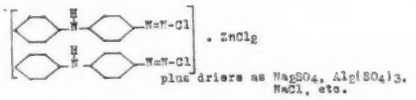
B. Those Stabilized as Complex Salts of Diazo Compounds

The diazo compounds, being basic, can form double salts with chlorides or other halides of the metallic elements. Thus stannic chloride forms with para chloro aniline the salt:

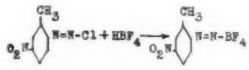


Mercuric, mercurous, ferric, cadmium, zinc, and antimony salts are reported as capable of forming double salts with certain diazo compounds. The diazo-cuprous salts, as one would expect, are unstable, and many explosive.

Zinc double salts with diazonium compounds find much application in this method. Thus, dianisidine can be diazotized, then the double salt formed with zinc chloride. The compound thus made is salted out much in the same way as soap is salted out. It is then filtered and mixed with an anhydrous media to take up the water as crystallized water—using Na_2SO_4, $Al_2(SO_4)_3$, sodium naphthalene sulfonate. Alum, or sodium chloride, or other standardizing water soluble fillers are added to make the compound up to a certain strength powder. This method is applicable especially for the Variamine types of naphthol salts. For example, Variamine Blue Salt RT would be stabilized, using this method, as:



Another way of forming stable complex salts with diazo compounds is by the use of borofluoric acid, HBF_4. Thus Fast Red RL Salt or 5-Nitro-2-azo-Toluene is stabilized with HBF_4 as:

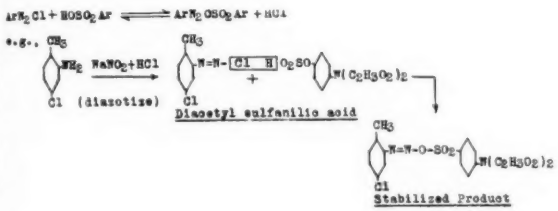


However, borofluoric acid cannot be used in all cases as the borofluoric salts are usually fairly insoluble. Borofluoric sulfonic acid, and fluóro sulfonic acid are said to form complex salts with diazo compounds, and the solubility is increased by utilizing the sulfonic group.

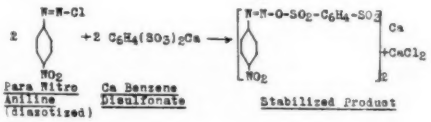
Complex cyanides and metallic fluorides are also used, the former because of greater ease in drying, and the latter because of greater solubility over certain of the other complex salts.

C. Those Stabilized with Aromatic Sulfonates

These are formed by reacting the diazo compound (the Naphthol Salt) with certain aryl sulfonates according to the general reaction:



Instead of using the acid, the sodium or calcium salt of the acid can be employed. For example, the calcium salt of benzene disulfonic acid may be used with para nitro aniline as follows:



It will be noted that in this method of stabilizing no amino groups which are free to couple to form diazoimino compounds can be used as stabilizers. If there are free amino groups in the stabilizer a stabilized product akin to the Rapidogen type results as is described in the next part (X). Naphthalene sulfonic acids may be used as well as benzene sulfonic acids or their inorganic salts, but the nature of the diazo compound will influence the certain benzene or naphthalene sulfonic acid to use for best results.

This type of stabilized diazo compounds hydrolyze very rapidly in dilute aqueous solution yielding the diazonium hydroxide, ArN_2OH.

Further stabilization of this type in general is accomplished by adding the aromatic sulfonate in excess of that required for the first reaction shown under this section (IX-C) in order to drive the equilibria to the right (as shown), and form the complex compound in good yield. Another aid in accomplishing this is to add a buffer such as sodium acetate to neutralize the hydrochloric acid formed. The water present is converted to water of crystallization with anhydrous alum, soda sulfate, magnesium sulfate, aluminium sulfate, or it can be removed with solvents or distillation. The aryl sulfonate added in excess for the reason given above aids in the solubility of the complex stabilized compound. The aryl stabilizer may not necessarily be simply a benzene or naphthalene sulfonate or their inorganic salt, but may be a substituted benzene or naphthalene sulfonate, providing no free amino groups are in the substituted sulfonate.

Up to this point it can be seen that no first components—Naphthols—could be added mechanically to the dry stabilized diazo salt, for if such were the case, coupling would occur immediately on trying to paste up the mix with water. That is, the stabilized diazo salt would become active as it dissolved in the water, and the first component being present, coupling would occur, and an insoluble azo dye would be formed in the solution instead of on the fiber, and this insoluble dye would have no substantivity to the fiber. The active type of stabilized diazo compounds (stabilized naphthol salts) is useful for convenient shipment, storage, and handling, but must be applied on the cloth or fiber separately from the first component, i.e., the cloth must be padded, dyed, or printed with the first component (the AS) and then developed in a solution of the active stabilized diazo salt; or the process can be reversed, putting on the second component and then developing the color in a solution of the first component. This development may be accomplished on a jig, pad, or by printing.

Since this method is sometimes awkward, and sometimes rather expensive especially in an open type print with a large white ground, it was desired to mix in the first component with the diazotized base which had been stabilized so that no coupling occurred until the compound had attained a substantivity to the fiber. This desire led to the development of the passive type of stabilized diazo compounds, of which the Rapidogens, Diagens, Rapid Fasts, Rapidozols and Pharmasols are examples in trade at the present time. It must be mentioned in passing that certain of the passive stabilized diazo mixes are not as fast to crocking and to washing as are the corresponding colors formed by developing with active stabilized diazo compounds over naphthol prepares. The dyestuff manufacturers, fortunately, are rapidly correcting this deficiency. In addition to these drawbacks, some of the passive type mixes are quite sensitive to fats and oils used in finishing, and will bleed if due care and attention is not taken of this point. Resin finishes do not share this posi-

tion with the fats and oils, but will not cause bleeding of colors produced by the passive stabilized type mixes.

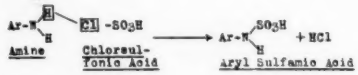
PART X. PASSIVE STABILIZED DIAZO COMPOUNDS

This type is characterized as not coupling in neutral or alkaline solution under normal conditions. Certain of this type are coupled by steam treatment after printing and are represented by the Rapidozols in trade. Others are not coupled after application by steaming, but by acid treatment, such as acid washing or acid ageing. The latter are represented in trade by the Rapid Fasts, the Rapidogens, Diagens, and Pharmasols.

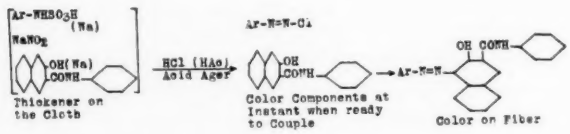
Chemically speaking, we may divide the passive stabilized diazo compounds in another way, namely, those converted into antidiazotates, those converted into diazoamino or diazoimino compounds, those converted into amino sulfamic acids, and those converted into complexes with formaldehyde-bisulfite.

In the passive stabilized diazo compounds, both the first and second components are present, as well as the nitrite necessary to convert the bases into diazo compounds. This nitrite is present in a combination such that the base is not in an active state, that is, the base is not ready to couple even though it may be diazotized. In most, if not all cases, the amine (second component) is the component that is stabilized, while the first component (naphthol) is simply mixed mechanically in with the stabilized second component.

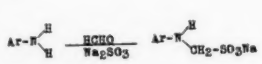
One method of passively stabilizing is to convert the amine to the sulfamic acid by the use of chlorsulfonic acid:



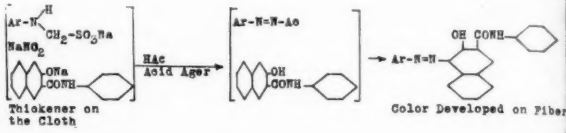
Nitrite is mixed in, as well as the first component. When a paste is made up of thickener (e.g., starch-tragacanth), the aryl sulfamic acid (as shown above), nitrite, and the AS component, and is printed on the cloth, no coupling occurs until the cloth, having the dye paste already printed on it is passed into an acid media, say an acid ager or acid wash box. This mechanism might be represented thus:



Another method of passive stabilizing is to convert the amino group into a complex, by the use of formaldehyde-bisulfite (a reaction general to amines), obtaining the addition product as is shown below:



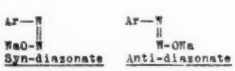
This is then mixed with suitable driers, nitrite, standardizers, the AS, and sold. The color shop of a print work would dissolve this powdered mixture in water, possibly with a little caustic, add the thickener, and print. The print would then be acid aged to bring about coupling.



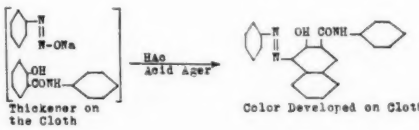
The formaldehyde-bisulfite compound with the amine is fortunately, water soluble.

However, it has been found in some instances, that it was necessary to block the coupling position in the naphthol (usually ortho to the OH group), so that no coupling occurs until all the amine has been diazotized. This may be done, according to reports, by combining formaldehyde-bisulfite on the ortho coupling position of the AS. This is eliminated when the amine has become completely diazotized and is ready to couple. The author believes, however, that the formaldehyde-bisulfite probably reacts at the hydroxy group of the AS, and causes steric hindrance effect on the position ortho to it.

Perhaps one of the first, if not the first method of forming stabilized diazo compounds was by the use of caustic to form the sodium diazonate. Strong caustic must be employed, e.g., 106° Twaddle, and in many cases the diazotized amine is poured onto solid caustic. It is necessary to employ this strong caustic to cause isomeric rearrangement from the syn-diazonate to the stable anti-diazonate. This is shown below:



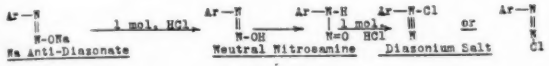
Suitable driers, and the customary standardizers are added, then the AS component is mechanically mixed in. These mixtures are soluble and stable in alkaline solution but couple under acid conditions:



It is necessary, of course, in making the diazonates, to first diazotize the base with sodium nitrite and hydrochloric acid or other suitable acid, before mixing the same with the strong caustic. This is the basis in general of the Rapid Fast Colors for Printing. However, each base is subject to peculiarities, and suitable corrections and additions in the technique of their preparation are usually necessary in specific instances. It is claimed that more difficulty is experienced in converting amines containing positive groups than with amines containing negative

groups, e.g., it is harder to convert an amine substituted with methyl groups than it would be to change one having nitro or halogen groups into the corresponding nitrosamine and thence to the diazonate. Furthermore, lower temperatures in general can be employed in this conversion when the amine has negative substituent groups than when it has positive constituent groups.

After the sodium anti-diazonate has been formed, if one mol of acid be added the neutral nitrosamine is formed. If one more mol of acid be added the neutral nitrosamine is converted into the acid diazonium salt which will couple with a first component if present. This mechanism is shown below:



To brighten the shade of the Rapid Fasts on the fiber, as well as to remove any dyestuff "crocked on," a soaping is desirable, either with or without a chrome wash.

It is to be noted that the Rapid Fast Colors with an "H" in their mark are remarkable for good stability of their printing pastes, while those with an "I" in the mark are of Indanthren fastness to light and to washing.

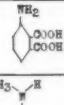
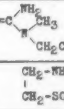
Due to technical difficulties, not all the amines which might be considered capable of forming diazotates can do so, and hence the range of dyestuffs stabilized passively as diazotates is limited.

Perhaps the latest and most important development in producing passively stabilized azoic colors is the development of the trade products we know as Rapidogens, Diagens, and Pharmasols. The base is diazotized and coupled with a substance having an amine group, a solubilizing group such as a sulfonic or carboxylic acid group. This complex compound known as a diazoamino or diazoimino compound as the case may be, is mixed with suitable driers, standardizers, and the AS component. This powdered mixture is stable in neutral or alkaline solution, and is soluble in alkaline solution. The alkali is needed to solubilize the AS component rather than the diazoamino compound as the sulfonic or carboxylic acid groups attached render this soluble.

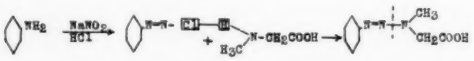
For purposes of simplicity we will denote this compound which is attached chemically to the base to render it passively stabilized as "the stabilizer."

The stabilizer may be a primary aromatic amine or diamine, a secondary aromatic amine or diamine, a secondary aliphatic amine, a cyclic amino compound, or a substituted quaternary ammonium base. All cases above have a group or groups inducive of solubility such as sulfonic or carboxylic acid groups present. Some of these stabilizers act better than others from the point of yield and ease of reaction and technique. Due to patent situations, while the color components of a given dyestuff of this type may be the same in all respects, the stabilizers may vary widely. A few of the possible stabilizers are given in the following table:

TABLE IX

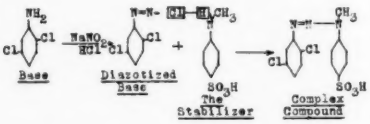
Name	Chemical Formula
4-sulfo-2-amino benzoic acid	
5-sulfo-2-amino benzoic acid	
4-sulfo-2-methylamino benzoic acid	
1-aminobenzene-2:5-disulfonic acid	
1-aminobenzene-2:3-dicarboxylic acid	
1-methylamino-benzene-4-sulfonic acid	
1-methyl-2-ethylamino-benzene-4-sulfonic acid	
1-aminobenzene-3:5-dicarboxylic acid	
4-amino-1-methylbenzene-2-sulfanilide	
1-aminonaphthalene-2:4 disulfonic acid	
Dibenzylamino-disulfonic acid (no positions given)	
3-aminobenzene-1:2 dicarboxylic acid	
Methylamino acetic acid (Sarcosine)	
Diethanol amine	
Methylamino ethane sulfonic acid	
Butylamino acetic acid	
Cyclohexyl amino acetic acid	
Methyl glucamine	
Proline	
Pipecolinic acid	
Creatine (N-methyl guanidyl acetic acid)	
Taurine	

The method of accomplishing this varies slightly according to the base (second component) used, but is generally done by diazotizing the aromatic base in the usual manner with sodium nitrite and hydrochloric acid, then coupling this to the stabilizer. Lactic, tartaric, acetic, or sulfuric acid may be used in some cases instead of hydrochloric acid in the diazotization. The diazoamino or diazoimino compound is formed according to the Hantzsch Theory. This is represented below:



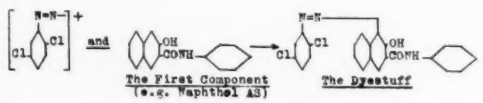
This compound, passively stabilized now, is split at the dotted line shown above, by acid, and will couple with an AS component if present. The passively stabilized compound is soluble in water, but is not hydrolyzed by water as are the actively stabilized diazonium compounds mentioned heretofore.

Taking an example to illustrate:



This complex diazoimino compound is mixed with suitable driers and standardizers as necessary, the AS component, dissolved in water, and the requisite thickener added, and printed on cotton. After printing, the cloth containing the color components not yet coupled as well as the thickener, is passed into an acid ager. When acid aged the complex diazoamino compound gives the diazo ion, as shown:

and the AS component being already present, coupling takes place:



In connection with the acid ageing, the acid preferably used is acetic, although lactic, formic, hydrochloric, nitric, sulfuric, tartaric, or other acids could be used insofar as the coupling was concerned, although with not the same degree of efficiency as far as coupling of colors and certainly with not the same success in certain cases as far as tendering of the goods was concerned.

To complete the story, mention should be made briefly to the Rapidozol type colors. It will be noticed that these are stabilized diphenylamine derivatives mixed with an AS component. The stabilizer is split off the diazamine by acid free steam. It has been reported that the stabilization is accomplished by the diazamine-formaldehyde-bisulfite complex, which is split by steam alone, only in the case of the diphenylamine derivatives. This last statement has not been confirmed to the author's satisfaction, and is to be regarded by the reader in this light.

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28. U. S. P. No. 1,858,628.
29. U. S. P. No. 1,882,556.
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31. U. S. P. No. 1,882,561.
32. U. S. P. No. 1,920,542.
33. U. S. P. No. 1,923,202.
34. U. S. P. No. 2,015,204.
35. U. S. P. No. 1,572,715.
36. U. S. P. No. 1,744,172.
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TRADE NOTES • NEW PRODUCTS

OBITUARY

CARL F. LOMB

CARL F. LOMB, vice-president of the Bausch & Lomb Optical Company, passed away at his home in Rochester on Thursday, January 26.

Born at Birstein, Hesse Cassel, Germany, May 31, 1854, Mr. Lomb came to the United States in 1873 and was admitted to citizenship in 1879. He was first associated with the banking house of Jay Cooke & Co., of New York City and later joined the First National Bank of New York.

In 1874, Mr. Lomb became associated with the New York office of Bausch & Lomb. In 1875 he came to Rochester to aid in the formation of the Rochester German Insurance Company. He returned to his work with Bausch & Lomb in 1877 where his training in accountancy and finance brought him continuous advancement. In 1882 he was elected secretary of the company and in 1909 was made a Vice President, a position he held continuously until his death. In addition to

is association with Bausch & Lomb, Mr. omb served as vice-president of Yawman Erbe Mfg. Co., director of the Security rust Company and director of Rochester elephone Corp.

ADOLPH SCHOLLER

ADOLPH SCHOLLER, vice-president and treasurer of Scholler Bros., Philadelphia, manufacturers of textile chemical specialties, died Feb. 12. Fifty-five years old and a native Philadelphian, Mr. Scholler had been in charge of the company's technical department.

Burial, which was private, took place Feb. 15 at Whitemarsh Memorial Park. Mr. Scholler's many friends and members of the organizations to which he belonged called Tuesday evening at the Bair Funeral Home, 1820 Chestnut St. He was a member of the Masons, Lu Lu Temple, Penn Athletic Club, Manufacturers and Bankers Club and Seaview Country Club. He was also a member of the American Association of Textile Chemists and Colorists.

Attesting to Mr. Scholler's wide popularity, in addition to the many messages of condolence expressed, was the impressive display of flowers banked in the funeral home.

The Scholler Bros. Company was established in 1907 by the late Henry H., Adolph and Fred Scholler. Surviving, in addition to Fred Scholler, is Ida M. Scholler, a sister.

FREDERICK S. BEATTIE

FREDERICK S. BEATTIE, assistant professor of organic chemistry, at the Lowell Textile Institute, Lowell, Mass., died suddenly at St. Joseph's hospital in that city on January 11th, following an operation. He had been a member of the faculty at Lowell for 20 years and was in his 56th year at the time of his death.

For many years he had translated and

digested the Technical Notes from Foreign Sources which have appeared in this journal. He was able to read at least five languages, French, German, Latin, Spanish and Italian.

In addition to his duties at the Institute, he was also an ordained minister of the Episcopal Church and served for a number of years as curate at St. Anne's Episcopal Church in Lowell. During the summers he served also at the Church of the Messiah in North Woodstock, New Hampshire.

He was a faculty member of Omicron Pi Fraternity. Students who had the privilege of taking courses with him will always have a warm spot in their heart for "Doc."

He is survived by his widow, four sons, one daughter, four sisters and one granddaughter.

● ANNUAL MEETING, A. A. T. T.

The Annual Meeting of the American Association of Textile Technologists was held on the evening of January 4th at the Architectural League Club Room, 115 East 40th St., New York City, at which time 44 members were present for dinner and the election of officers and governors which followed.

Those who were elected are: President, Constant Scholer of The New York School of Textile Technology; First Vice President, Joseph Meierhans of Farr Alpaca Company; Second Vice President, Dr. E. W. K. Schwartz; Secretary, Bernice S. Bronner of Brown Durell Co.; Treasurer, Rudolph E. Semmler of Forman Fabrics Division, Cohn-Hall-Marx Company, Inc.

For Board of Governors in addition to the officers elected were: For 3 years, Oscar Geier of Richards & Geier and Herbert H. Hatch of Hatch Textile Research, Inc. For 2 years, Alexis Sommaripa of E. I. du Pont de Nemours Co. Inc. and Erb. M. Ditton of Gotham Silk Hosiery Company. For 1 year, Aubry D. Kelly of G. Elbogen & Company.

Members elected for the Auditing Committee were Dr. Vladimir Tuna, Consulting Chemist, Carl Mattmann of A. M. Tenny Associates and Henry Gassman of United States Appraisers Stores Textile Laboratory.

The retiring President, Dr. J. F. X. Harold delivered an eloquent address on his retiring from office and reviewed the principal technological developments in the textile industry during the year 1938. Following this he commented briefly on the wisdom of the Nominating Committee headed by Stuart Walker of United States Testing Company in their selection of the staff for the incoming year.

Reports of various committees were heard and it was announced that this Association now has a local membership of about 130 in good standing. Special mention was made by the Publicity Committee regarding the excellent contribution in press notices that was made by the newspapers and periodicals in the textile industry. An expression of gratitude was voiced in behalf of all of them. The scrap book of the Association was then presented by Werner Schoeberlein in which about 100 press notices were to be seen as clipped from the trade papers during 1938. Mr. Alexis Sommaripa is Chairman of Publicity for the coming year.

● RESEARCH, TEXTILE FINISHES

The Steering Committee on Research for Testing Textile Finishes of the American Society for Testing Materials held a meeting of subscribers to its research fund at 2:00 P.M. on Thursday, January 26, at the Chemists Club in New York City.

At the meeting arrangements were made for undertaking the Committee's research program which will be carried out by a research associate to be appointed shortly.

The subscribers to the research fund to date are:

American Viscose Corporation, E. I. du Pont de Nemours & Company, Inc., The Hart Products Corporation, Hercules Powder Co., Providence Dry-Salters Division, National Oil Products Company, Inc., Sandoz Chemical Works, Inc., Scholler Brothers, Sears-Roebuck & Co., and Tubize Chatillon Corporation.

The Steering Committee was organized in May 1938 under the sponsorship of Committee D-13 on Textile Materials of the American Society for Testing Materials. L. B. Arnold, Jr. is Chairman, and E. A. Georgi is Secretary of the Steering Committee.

The object in organizing the research program of this committee was to establish definite physical testing methods which would supplant the empirical methods now generally used in the textile industry.

• TEMPERATURE SYMPOSIUM

A symposium on "Temperature and Its Measurement in Science and Industry" will be held under the auspices of the American Institute of Physics, probably next fall, the dates to be announced later. Consistent with the title, the symposium will broadly cover many fields, its primary purposes according to present plans being to (1) coordinate the treatment of the subject in the sciences and branches of engineering, (2) review principles and bring up to date the record of recent work, (3) accumulate contributions for a comprehensive text, to be published as soon as possible after the symposium is held, (4) reveal the subject as an important branch of physics and (5) supply schools with the information required for the improvement of curricula. The Institute confidently expects that a stimulating, valuable and unified program will be arranged, an aim which will require the help of many contributors.

A representative steering committee has been formed consisting of the Chairman, C. O. Fairchild, Director of Research, C. J. Tagliabue Mfg. Co.; Dr. E. F. DuBois, Medical Director Russell Sage Institute of Pathology and Professor of Medicine Cornell University Medical College; Dr. Gustav Egloff, Director of Research, Universal Oil Products Co.; Dr. John Johnston, Director of Research, U. S. Steel Corporation; Dr. Walter G. Whitman, Head, Department of Chemical Engineering, Massachusetts Institute of Technology; and Dr. H. A. Barton, Director, American Institute of Physics.

Those who are interested in taking part in this symposium should communicate with the Institute at an early date, giving information regarding their field of work and the subject of the contribution they wish to make. Such contributions will be coordinated with the subjects of a group of invited papers, and assignments and divisions made. Further information for contributors will be available shortly. The American Institute of Physics is located at 175 Fifth Ave., New York City. Readers of the Reporter should have considerable interest in this symposium because of the importance of temperature in many dyeing and finishing operations.

• USES OF GLYCOLS

"Industrial Applications of the Glycols" was the subject of a comprehensive paper given by H. B. McClure of Carbide and Carbon Chemicals Corporation before the meeting of the American Association for the Advancement of Science, at Richmond, December 27, 1938. Mr. McClure pointed out that, since the first tank car of ethylene glycol was shipped 12 years ago, 6 different glycols and 50 different glycol derivatives have been made available in commercial quantities. A recent count of their industrial uses showed that there are almost 150 applications for glycols themselves without considering their chemical derivatives.

Glycols and their derivatives are said to affect almost every object made in the last few years. Modern midget radios, for instance, are made possible by compact, efficient condensers in which ethylene glycol plays an important part. The same type of condensers are also used extensively in electric refrigerators. Again, a glycol derivative is used as the plasticizer for the resin used in the latest type of safety glass.

Diethylene glycol is used as a lubricant for worsted fibers during the manufacture of yarn. It is said to decrease fiber breakage, yet can be quickly removed by rinsing with water. Silk skeins, too, when imported, are softened by this glycol before they can be unraveled and knitted or woven.

As an anti-freeze, glycols are used in considerable quantities. "Eveready" "Prestone" anti-freeze contains ethylene glycol as its major constituent, as well as a few per cent of special ingredients which reduce the corrosive action of the water in the cooling system, 95 per cent on ferrous metals and 75 per cent on non-ferrous metals. Milk and beer cooling systems often make use of propylene glycol as an anti-freeze. Most recently, glycols have been used as the sole coolant in aircraft engines. No water is used with the glycol in this application. The plane that finished third in the 1938 Cleveland Air Races was powered by a glycol-cooled engine, as was the U. S. Army bomber which, with a full load, recently broke the speed record between Dayton and Buffalo.

It is stated that in the decade that the glycols and their derivatives have been commercially available, they have helped not only to improve old products and processes, but also to create new ones. Because they are made synthetically, their manufacture can be closely controlled and they can be held to rigid specifications. They readily lend themselves to "custom-building" and it is possible, by choosing the correct compound, to obtain one with the desired boiling point, viscosity and water solubility.

• GULICK ELECTED

C. P. Gulick, Chairman of the Board of National Oil Products Co., Harrison, N. J., has been elected President of the New Jersey Social Hygiene Association.

Mr. Gulick also was elected Vice President of the West Hudson Manufacturers Club for the next fiscal year at the Club's annual meeting in January.

• QUARTERLY PRICE LIST

Copies of the Quarterly Price Lis January, 1939, issued by the R & H Chem cals Dept., E. I. duPont de Nemours Co., Inc., Wilmington, Del., have recen been distributed. Featured are the ne duPont peroxide bleaching processe Copies of the list are available up request.

• GENERAL RELEASES

General Dyestuff Corp., 435 Huds Street, New York City, has issued circ lars describing the following products:

Fastusol Blue L F B G—said to remarkable for its very good fastness light, good fastness to alkali, acid an crocking. The new product is said level well and to have good solubility it is said to be suitable for even dyein of mixed fabrics of cotton and rayon an can be dyed on real silk from an acet acid bath. Circular I.G. 1591.

Indanthren Printing Black B G Suprafix Paste—said to be suitable fo black or grey prints on account of i high fastness properties; it is said possess excellent fastness to light an very good fastness to washing an chlorine. It is claimed that the gre shades are absolutely fast to water spo ting and hot pressing. Circular I.G. 155

Indanthren Red Brown G R Pdr. Fi for Dyeing—it is stated that it will of considerable interest in dyeing for th production of various brown and re brown shades possessing excellent a around fastness properties. Its goo solubility and other dyeing properties ar said to make it suitable for machine dyein and for the pigment padding process, par ticularly in combination with those v dyestuffs which are best dyed accordin to the I N procedure. Circular I. G. 160

• LAVANBURG REPRESENTATIVES

As announced in our issue of Januar 23rd, we are giving below the comple list of Lavanburg representatives. Re organization of the Lavanburg sales sta has been completed and below are th names, addresses and telephone numbe of the men and selling organizations wh will, in the future, be handling the Lava burg line of chemical colors:

BOSTON, MASSACHUSETTS
N. S. Wilson & Sons, Inc.
150 Causeway Street
Telephone: CApitol 5010

BROOKLYN, NEW YORK
Fred L. Lavanburg Company
105 Bedford Avenue
Telephone: EVergreen 8-4640

BUFFALO, NEW YORK
Mr. S. G. Hait, Jr.
901 Liberty Bank Bldg.
Telephone: MAdison 2151

HICAGO, ILLINOIS
Mr. G. E. Cortiss
Fred L. Lavanburg Company
53 West Jackson Blvd.
Telephone: HArrison 5765
INCINNATI, OHIO
Mr. Wm. J. Deeks
717 First National Bank Bldg.
Telephone: MAin 1649
LEVELAND, OHIO
Mr. R. H. Coerdt
942 Terminal Tower Bldg.
Telephone: PRospect 7399
ANSAS CITY, MISSOURI
Abner Hood Chemical Company
507 North Montgall Avenue
Telephone: VIctor 3621
OS ANGELES, CALIFORNIA
Mr. F. E. Dillon
1855 Industrial Street
Telephone: VAndyke 6506
OUISVILLE, KENTUCKY
Mr. F. H. Topp
Kentucky Terminal Warehouse
Telephone: JAckson 0291
ONTREAL, QUEBEC
Mr. H. J. McAide
1100 East Craig Street
Telephone: CHerrier 2030
EW ORLEANS, LOUISIANA
Mr. E. P. Lastrapes
206 Tchoupitoulas Street
Telephone: RAymond 2914
HILADELPHIA, PENNSYLVANIA
Mr. G. A. Olson
1700 Walnut Street Bldg.
Telephone: PEnnypacker 0250
ITTSBURGH, PENNSYLVANIA
Mr. Homer D. Butts
Grant Building
Telephone: ATlantic 7680
EATTLE, WASHINGTON
Cunningham Company
1020 Fourth Avenue South
Telephone: MAin 8345
T. LOUIS, MISSOURI
J. E. Niehaus & Company
1516 Mart Building
Telephone: CEntral 6226
T. PAUL, MINNESOTA
L. A. Moore & Company
740 Vandalia Street
Telephone: NEstor 1433
OUTH SAN FRANCISCO, CALIF.
Mr. M. W. Reece
P. O. Box 46
Telephone: ENterprise 1-0608
ORONTO, ONTARIO
Mr. H. J. McAdie
17-37 River Street
Telephone: ADelaide 2039

• NEW LOCATION FOR ALROSE

The manufacturing plant and laboratories of the Alrose Chemical Company and Mark Weisberg Laboratories have recently moved from their former Providence, Rhode Island locations, 80 Clifford Street and 92 Printery Street, to a new, enlarged factory at 180 Mill Street, Cranston, Rhode Island. The new plant, off Park Avenue, has 40,000 square feet of working space, with laboratories to accommodate 8 chemists.

The John P. Bonnett & Son Company, formerly owned by Mark Weisberg Laboratories, has been liquidated. Its operations in the electroplating of jewelry and novelties in precious metals have been discontinued in order that increased emphasis may be given by Mark Weisberg Laboratories to research and the development of new specialties for the metal and textile trades.

At the new plant, a full line of synthetic chemicals for the textile industry will be produced as in the past . . . also the production of plating solutions for jewelers will be continued and enlarged. Mr. Mark Weisberg and Mr. Frank K. Smith, well known to the trade, are devoting their full time to the servicing and sales of equipment and special chemicals.

Among the many textile specialties produced by Alrose and available through local dealers are wetting agents, silk and rayon printing gums, waterproofing compounds, delusterants, fulling compounds, mercerizing assistants, oils and softeners, and also textile soap specialties.

The jobbing trade is invited to call on Alrose Chemical Co. for advice on textile processing problems . . . a service rendered free of charge. The new telephone numbers are Williams 3000 and 3001. A rapid delivery system is maintained for servicing the trade promptly and efficiently.

• NATIONAL RELEASE

National Aniline & Chemical Co., 40 Rector Street, New York City, announces release of a bulletin describing the following product:—

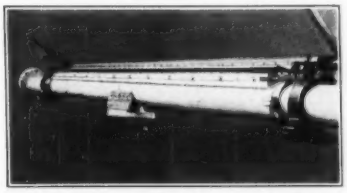
National Fast Light Rubine B L—a new addition to the line of acid dyes which is said to possess outstanding fastness to light. It is said to be readily soluble and to level well. It produces a bluish shade of red. It is said to be of particular importance for the coloring of carpet yarns and ladies' dress goods. For these purposes it should be combined with other light-fast dyes such as National Fast Light Yellow 2 G, National Wool Orange 2 G Crystals and National Alizarine Sapphire 2 G L. Bulletin No. 227.

• CIBA REVIEW

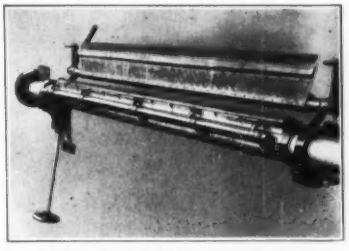
Copies of *Ciba Review*, Number 17, have recently been distributed. This issue features "Dress Fashions of the Italian Renaissance." Contents are described by the following titles: Table of Dates for the Italian Renaissance; The Renaissance; Italian States at the Time of the Renaissance; The Development of Dress Fashions During the Italian Renaissance; Velvet and Silk in the Italian Renaissance; Colors in the Renaissance; Extravagances in Renaissance Dress; Historical Gleanings; Scientific Notes. Included with this issue is a supplement entitled "Dyeings with Chlorantine Fast Colors" which gives dyeing instructions and shows a number of sample swatches. Copies of *Ciba Review* are available upon request to Ciba Co., Inc., Greenwich & Morton Sts., New York City.

• NEW VACUUM BOX

Birch Bros., Inc. of Sommerville, Mass. announce a re-inforced adjustable slot vacuum box, which, it is claimed, if used with the proper pump gives the best extraction in open width of any machine.



Vacuum Box with Center Outlet and Seal in Operating Position



Adjustable Slot Vacuum Box

It is fitted with their Patent Vacuum Slot Seal which is said to permit efficient extraction even on open weaves.

• JOINS ARIDYE

William B. De Pass joined Aridye Corporation on February 13 as Southern service representative. He will work with Chester M. Robbins, who is in charge of sales, with headquarters in Greenville, S. C.

Mr. De Pass was graduated from Clemson College in 1932. Following his graduation, he was connected for four years with the Southern Bleachery & Print Works in Taylor, S. C. In 1937, he became assistant superintendent in charge of printing for the Ware Shoals Bleachery, Ware Shoals, S. C.

The Aridye Corporation manufactures and markets the Aridye textile colors used in the new Aridye printing process.

It is stated that this method is being used now in many textile plants throughout the South and West.

• OPEN BUFFALO OFFICE

On February 1st Reichhold Chemicals and the Fred L. Lavanburg Company established a branch office in Buffalo, from which point sales and distribution of RCI synthetic resins and Lavanburg colors will be handled for the trade in Western and Central New York.

The Buffalo sales office will be in charge of Mr. Selden G. Hait, Jr., who has, for the past seven or eight years, represented the Fred L. Lavanburg Company in the Cleveland district. He will, from now on and at regular intervals, be seeing the users of resins and colors in the Buffalo, Niagara Falls, Rochester, Syracuse, Binghamton, Elmira and Jamestown areas.

Mail (requests for technical service, price enquiries, orders, etc.) will reach Mr. Hait at 901 Liberty Bank Building (telephone Madison 2151), Buffalo, New York.

• REPRESENTS LAUREL SOAP

W. R. Sargent has recently been appointed sales representative for Laurel Soap Mfg. Co., Inc., Philadelphia, manufacturers of textile soaps, oils and finishes. He will work in conjunction with Mr. A. Henry Gaede whose headquarters are in Charlotte, N. C.

Mr. Sargent, whose home is in Greenville, S. C. has had a number of years of practical mill experience in the South, and will cover the eastern South Carolina, Georgia, Alabama, and part of Tennessee, with warehouse stocks available at Charlotte, N. C., and Chattanooga, Tenn.

• APPOINTED MANAGER

United States Rubber Company announces the appointment of Frederick P. Jecusco as manager of its Mechanical Fabrics Division in Providence, R. I. Author of several technical papers on the aging of rubber thread under various lights, Mr. Jecusco has been granted patents both in the rubber and textile fields. He was awarded a prize by the British Society of Dyers and Colourists in 1917 for his research on the bleaching of cotton yarns and fibers.

After working a short time as Chief Chemist at the Arnold Print Works at North Adams, Mass., he returned in 1921 to his former employers, The Ansonia O. & C. Co., to establish the Chatham Mfg. Company, for the making of cut rubber thread. He established the technical department there, becoming technical superintendent, later being made sales and general manager of the company. He remained with the Chatham Mfg. Company until July, 1938.

• RESIGNS FROM BIGELOW-SANFORD

Giles E. Hopkins has submitted his resignation, effective April 1, 1939, as Technical Director of the Bigelow-Sanford Carpet Company, Inc., to accept a position with the United Shoe Machinery Corporation. Mr. Hopkins came with the Bigelow-Hartford Carpet Company, Inc., as Chemical Engineer in January, 1929, and was appointed Technical Director of the Bigelow-Sanford Carpet Company in April, 1931.

He was active in the affairs of the American Society for Testing Materials, the Industrial Research Institute associated with the National Research Council, and the United States Institute of Textile Research. He served on the Executive Committees of the A.S.T.M. and the I.R.I., and was a Director of the U.S.I.T.R.

• NYLON HOSIERY

Women's stockings made of nylon w be displayed publicly for the first t at the San Francisco World's Fair, du Pont Company made known tod When announced late in 1938, nylon said by chemists to be one of the m significant developments in the history industrial research in the United Sta

At the Fair, mechanical hands stretch a nylon stocking from morning night so that visitors may see for th selves the strength and elasticity of man-made fibers. A fountain compo of thousands of nylon filaments, animat by air currents and spot-lighted, will fo the stage-setting for the world premi of this chemical marvel.

The stockings on display will be service weight. However, nylon filame of extraordinary fineness can be sp much finer than the filaments of silk a rayon, according to the chemists. Th it is possible to employ nylon in maki stockings of new extremes of sheerne which yet will possess great strength. T company explains that manufacture of new material is limited at present t small experimental plant near Wilmi ton, Delaware, and that it will be a y or longer before nylon stockings widely available.

The Fair at San Francisco opened Fe ruary 18. The du Pont chemical wond show is in the Homes and Garde Building.

Halftones or line cuts to illustrate new products should be not over 2¼" wide. Halftones — 120 screen.

CLASSIFIED

WANTED: TEXTILE CHEMIST: Knowledge textile chemistry and dyeing essential. One having experience in dyeing and finishing full fashioned hosiery preferred. Write giving details; age, training, plant experience, etc. Box No. 173, American Dyestuff Reporter, 440 Fourth Ave., New York, N. Y.

POSITION WANTED: Colorist and Chemist, 11 years' laboratory experience. Thorough knowledge of dye testing and matching. Capable of taking charge of laboratory. 30 years of age. Married. Will go anywhere. Write Box No. 170, American Dyestuff Reporter, 440 Fourth Ave., New York, N. Y.

POSITION WANTED: Master of Science, Chemistry Lowell Textile Institute. Two years' experience dyeing and bleaching cotton pile fabrics. Two years in chemical company laboratory, working with textiles, latex and compounding chemicals dependent on chemical and processing phases. Age 26, single, references. Will go anywhere Write Box No. 171, American Dyestuff Reporter, 4 Fourth Ave., New York, N. Y.

POSITION WANTED: Young Textile Scho graduate, with dyeing and laboratory experience, wan a job that requires ability. Salary secondary. Wri Box No. 172, American Dyestuff Reporter, 440 Four Ave., New York, N. Y.